

**Religion and Sexuality: Understanding  
the direction, functioning and extent of a  
complex relationship**

---



# **Religion and Sexuality: Understanding the direction, functioning and extent of a complex relationship**

---

**Caroline Rigo**

**Promoteur**

Vassilis Saroglou (UCL)

Thèse présentée en vue de  
l'obtention du grade de Docteur  
en sciences psychologiques et de  
l'éducation

**Président**

Mariane Frenay (UCL)

**Comité d'accompagnement et jury**

James Day (UCL)

Isabelle Roskam (UCL)

Stephan Van den Broucke (UCL)

Jesse L. Preston (University of Warwick, UK)

## Résumé

---

Depuis des décennies, les chercheurs se sont intéressés à l'influence de la religion sur les attitudes et les comportements des individus. Dans ce cadre, des chercheurs se sont penchés sur la relation entre religion et attitudes et comportements sexuels. De manière globale, les études indiquent que l'association entre ces deux réalités est plutôt négative. Cependant, elles ont pour la plupart été menées, aux Etats-Unis, dans un contexte valorisant donc la religion. Les résultats de ces études sont-ils dès lors généralisables à d'autres contextes, séculaires ? autre que chrétiens ? De plus, les précédentes recherches ont très peu marqué l'intérêt de comprendre la relation entre religion et sexualité. Au travers de huit études, nous nous sommes penchés sur cette relation complexe et avons démontré que celle-ci devait être envisagée de manière bidirectionnelle et, au moins en partie, indirecte. En effet, nous avons montré d'une part que la sexualité pouvait impacter la religion et d'autre part que des mécanismes psychologiques tels que les émotions morales, ou encore des prédispositions affectives et cognitives pouvaient expliquer l'inhibition de la sexualité par la religion. De par son ancrage dans différents domaines de la psychologie, nous pensons que cette thèse contribue de manière significative à la recherche en psychologie de la religion et en psychologie de la sexualité.

## Abstract

---

For decades, researchers have focused on the influence of religion on the attitudes and behaviors of individuals. In this context, researchers have examined the relationship between religion and sexual attitudes and behaviors. Overall, the studies indicate that the association between these two realities is rather negative. However, most of them have been conducted in the United States in a context that values religion. Are the results of these studies therefore generalizable to other secular contexts? Other than Christians? In addition, previous research has shown little interest in understanding the relationship between religion and sexuality. Through eight studies, we have examined this complex relationship and demonstrated that it must be considered bidirectionally and, at least in part, indirectly. Indeed, we showed on the one hand that sexuality could affect religion and on the other hand, that psychological mechanisms such as moral emotions, or emotional and cognitive predispositions could explain the inhibition of sexuality by religion. Because of its roots in different fields of psychology, we believe that this thesis contributes significantly to research in the psychology of religion and the psychology of sexuality.



## Table of contents

---

|                                                                      |           |
|----------------------------------------------------------------------|-----------|
| <b>Résumé</b>                                                        | <b>5</b>  |
| <b>Abstract</b>                                                      | <b>5</b>  |
| <b>Table of contents</b>                                             | <b>7</b>  |
| <b>Acknowledgments</b>                                               | <b>13</b> |
| <b>General Introduction</b>                                          | <b>19</b> |
| <b>Chapter 1</b>                                                     | <b>23</b> |
| <b>Current state of knowledge and research questions</b>             | <b>23</b> |
| <i>1. Religion and sexuality: Current state of knowledge</i>         | <i>25</i> |
| 1.1 Attitudes                                                        | 25        |
| 1.1.1 Premarital sex                                                 | 26        |
| 1.1.2 Sexual relationship outside the context of the couple          | 27        |
| 1.1.3 Sexual practices                                               | 27        |
| 1.1.4 Homosexuality                                                  | 27        |
| 1.1.5 Conclusion                                                     | 28        |
| 1.2 Behaviors                                                        | 28        |
| 1.2.1 Abstinence                                                     | 29        |
| 1.2.2 Sexual relationship outside the context of the couple          | 30        |
| 1.2.3 Sexual practices                                               | 32        |
| 1.2.4 Conclusion                                                     | 32        |
| 1.3 Specifications of spirituality on sexual attitudes and behaviors | 33        |
| 1.4 Religion in the context of the couple                            | 34        |
| 1.4.1 Marital satisfaction                                           | 35        |
| 1.4.2 Sexual satisfaction                                            | 36        |
| 1.4.3 Conclusion                                                     | 37        |
| 1.5 Explanatory mechanisms                                           | 38        |
| 1.5.1 Moral emotions                                                 | 38        |
| 1.5.2 Interindividual, affective and cognitive predispositions       | 40        |
| 1.5.3 Conclusion                                                     | 44        |
| 1.6 Sexuality from a cross-religious point of view                   | 44        |

---

|       |                                                                                                                                   |           |
|-------|-----------------------------------------------------------------------------------------------------------------------------------|-----------|
| 1.6.1 | Views of different religions                                                                                                      | 44        |
| 1.6.2 | Empirical studies                                                                                                                 | 46        |
| 1.6.3 | Conclusion                                                                                                                        | 47        |
| 2.    | <i>Limitations of existing literature and research questions</i>                                                                  | 49        |
| 2.1   | Cultural contexts and populations studied                                                                                         | 49        |
| 2.1.1 | Religious vs. secular context                                                                                                     | 49        |
| 2.1.2 | Population type                                                                                                                   | 50        |
| 2.1.3 | Differences/similarities between religions                                                                                        | 50        |
| 2.2   | Explanatory mechanisms                                                                                                            | 51        |
| 2.3   | Methodological aspects                                                                                                            | 52        |
| 2.3.1 | Studying the religion-sexuality link                                                                                              | 52        |
| 2.3.2 | Self-reported measures                                                                                                            | 52        |
| 2.4   | Causal direction                                                                                                                  | 53        |
| 3.    | <i>Organization of the empirical chapters</i>                                                                                     | 54        |
|       | <b>Empirical Chapters – PART I</b>                                                                                                | <b>55</b> |
|       | <b>Chapter 2</b>                                                                                                                  | <b>57</b> |
|       | <b>Religiosity and sexual behavior: Tense relationships and underlying affects and cognitions in Christian and Muslim samples</b> | <b>57</b> |
| 1.    | <i>Abstract</i>                                                                                                                   | 59        |
| 2.    | <i>Introduction</i>                                                                                                               | 61        |
| 2.1   | Religiosity and (Restricted) Sexuality                                                                                            | 61        |
| 2.2   | Related Affects and Thoughts                                                                                                      | 62        |
| 2.3   | A Cross-Cultural/Religious Perspective: Christianity and Islam                                                                    | 64        |
| 2.4   | Overview of the Studies                                                                                                           | 64        |
| 3.    | <i>Study 1</i>                                                                                                                    | 65        |
| 3.1   | Method                                                                                                                            | 65        |
| 3.1.1 | Participants                                                                                                                      | 65        |
| 3.1.2 | Measures                                                                                                                          | 65        |
| 3.2   | Results                                                                                                                           | 67        |
| 3.3   | Discussion                                                                                                                        | 69        |
| 4.    | <i>Study 2</i>                                                                                                                    | 70        |
| 4.1   | Method                                                                                                                            | 70        |

|                                                                                                                                                              |            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| 4.1.1 Participants                                                                                                                                           | 70         |
| 4.1.2 Measures                                                                                                                                               | 70         |
| 4.2 Results                                                                                                                                                  | 71         |
| 4.3 Discussion                                                                                                                                               | 73         |
| 5. <i>General Discussion</i>                                                                                                                                 | 74         |
| <b>Chapter 3</b>                                                                                                                                             | <b>77</b>  |
| <b>Couple relationship quality and the role of religiosity: A dyadic analysis of self- and partner-ratings using the Actor-Partner Interdependence Model</b> | <b>77</b>  |
| 1. <i>Abstract</i>                                                                                                                                           | 79         |
| 2. <i>Introduction</i>                                                                                                                                       | 81         |
| 2.1 Religiosity and Couple Relationship Quality                                                                                                              | 81         |
| 2.2 Religiosity and the Sexuality-Related Aspects of Couple Relationship Quality                                                                             | 82         |
| 2.3 The Role of Gender, Actor <i>and</i> Partner, Marital Status, and Secularized Context                                                                    | 84         |
| 2.3.1 Gender, Religiosity, and Relationship Quality                                                                                                          | 84         |
| 2.3.2 Gender, Religiosity, and Sexual Satisfaction                                                                                                           | 85         |
| 2.3.3 Actor and Partner and Religious Similarity's Effects                                                                                                   | 85         |
| 2.3.4 Marital Status and Secular Context                                                                                                                     | 87         |
| 3. <i>Method</i>                                                                                                                                             | 88         |
| 3.1 Participants                                                                                                                                             | 88         |
| 3.2 Measures                                                                                                                                                 | 88         |
| 4. <i>Results</i>                                                                                                                                            | 89         |
| 4.1 Partner Validation, Similarity, and Congruence                                                                                                           | 90         |
| 4.2 Bivariate Individual Correlations Between All Measures                                                                                                   | 91         |
| 4.3 Controlling for Possible Conflictual Links of Religiosity with Sexual vs. Non-Sexual Aspects of the Relationship                                         | 92         |
| 4.4 Dyadic Analyses through the Actor-Partner Interdependence Model                                                                                          | 93         |
| 5. <i>Discussion</i>                                                                                                                                         | 95         |
| <b>Conclusion PART I</b>                                                                                                                                     | <b>99</b>  |
| <b>Empirical Chapters – PART II</b>                                                                                                                          | <b>101</b> |
| <b>Chapter 4</b>                                                                                                                                             | <b>103</b> |
| <b>Love, not only sex: Religious mindset makes sexuality more romantic</b>                                                                                   | <b>103</b> |

---

|                                                                                                                                     |            |
|-------------------------------------------------------------------------------------------------------------------------------------|------------|
| <i>1. Abstract</i>                                                                                                                  | <i>105</i> |
| <i>2. Introduction</i>                                                                                                              | <i>107</i> |
| <i>3. Experiment 1</i>                                                                                                              | <i>108</i> |
| 3.1 Method                                                                                                                          | 109        |
| 3.2 Results                                                                                                                         | 110        |
| 3.3 Discussion                                                                                                                      | 112        |
| <i>4. Experiment 2</i>                                                                                                              | <i>112</i> |
| 4.1 Method                                                                                                                          | 112        |
| 4.2 Results                                                                                                                         | 113        |
| 4.3 Discussion                                                                                                                      | 114        |
| <i>5. General Discussion</i>                                                                                                        | <i>114</i> |
| <b>Chapter 5</b>                                                                                                                    | <b>117</b> |
| <b>Make love and lose your religion and virtue: Recalling sexual experiences undermines spiritual intentions and moral behavior</b> | <b>117</b> |
| <i>1. Abstract</i>                                                                                                                  | <i>119</i> |
| <i>2. Introduction</i>                                                                                                              | <i>121</i> |
| 2.1 The inherent conflict of sexuality with spirituality and morality                                                               | 122        |
| 2.1.1 Self-Enhancement Versus Self-Transcendence                                                                                    | 122        |
| 2.1.2 Impulsivity Versus Self-Control                                                                                               | 123        |
| 2.1.3 Disgust Indifference Versus Sensitivity                                                                                       | 123        |
| 2.2 Hypotheses and overview of the studies                                                                                          | 124        |
| <i>3. Experiment 1</i>                                                                                                              | <i>125</i> |
| 3.1 Method                                                                                                                          | 125        |
| 3.2 Results                                                                                                                         | 126        |
| 3.3 Discussion                                                                                                                      | 127        |
| <i>4. Experiment 2</i>                                                                                                              | <i>128</i> |
| 4.1 Method                                                                                                                          | 128        |
| 4.2 Results                                                                                                                         | 128        |
| 4.3 Discussion                                                                                                                      | 129        |
| <i>5. Experiment 3</i>                                                                                                              | <i>129</i> |
| 5.1 Method                                                                                                                          | 129        |

---

|                                                                                                  |            |
|--------------------------------------------------------------------------------------------------|------------|
| 5.2 Measures                                                                                     | 130        |
| 5.3 Results                                                                                      | 130        |
| 5.4 Discussion                                                                                   | 132        |
| 6. <i>General discussion</i>                                                                     | 133        |
| <b>Conclusion PART II</b>                                                                        | <b>137</b> |
| <b>General Discussion</b>                                                                        | <b>139</b> |
| 1. <i>Synthesis and discussion of the main results</i>                                           | 141        |
| 1.1 Understanding the causal direction                                                           | 141        |
| 1.2 Understanding the functioning                                                                | 142        |
| 1.2.1 Moral emotions                                                                             | 142        |
| 1.2.2 Interindividual, affective and cognitive predispositions                                   | 144        |
| 1.2.3 Towards an integrative model                                                               | 146        |
| 1.3 Understanding the extent                                                                     | 148        |
| 1.3.1 Other religious context: Islam                                                             | 148        |
| 1.3.2 In the couple context                                                                      | 149        |
| 1.3.3 Similarities between men and women                                                         | 150        |
| 1.3.4 Secular population                                                                         | 151        |
| 1.4 Limitations                                                                                  | 152        |
| 1.4.1 Generalization of Results                                                                  | 152        |
| 1.4.2 Complexity of studied concepts                                                             | 153        |
| 1.4.3 Theory-based approach and social norms                                                     | 154        |
| 1.4.4 Effects sizes                                                                              | 155        |
| 1.5 Future perspectives and practical implications                                               | 156        |
| 2. <i>Take home message</i>                                                                      | 158        |
| <b>References</b>                                                                                | <b>159</b> |
| <b>Appendix</b>                                                                                  | <b>195</b> |
| <b>Appendix 1: Religious priming decreases appreciation and watching time of erotic pictures</b> | <b>197</b> |



## Acknowledgments

---

Cette thèse s'accompagne de la fin de sept années d'un travail qui m'a enthousiasmée et passionnée. Il n'est le reflet que de la partie axée sur la recherche, cependant, avoir eu les aspects recherche ET enseignement a été primordial dans la concrétisation du travail que vous tenez entre les mains, tout comme les nombreuses personnes avec qui j'ai pu partager un bout de chemin. Il m'incombe maintenant de les remercier toutes (en espérant n'en oublier aucune), et c'est non sans émotions que je rédige maintenant ces quelques lignes.

Mes premiers remerciements sont tout naturellement pour mon promoteur, Vassilis Saroglou, sans qui je n'aurais pas eu la chance de me lancer dans la folle aventure que représentent la thèse et l'assistantat. Je me revois encore en Master 2, à la pause d'un cours de Religion et Psychothérapie, discutant d'une possibilité de me lancer dans la recherche. S'en est suivi un rendez-vous durant lequel le sujet de la présente thèse a émergé : pourquoi ne pas étudier ce qu'il se passe entre d'un côté la religion et de l'autre la sexualité. Autant dire que je suis ressortie de cette réunion plus motivée que jamais. Vassilis, merci pour cette opportunité, pour ces heures de discussions captivantes, pour votre disponibilité et votre volonté d'aller toujours plus loin qui ont fait que je me suis souvent dépassée. Merci également pour ces bons moments plus informels, que ce soit dans des endroits exotiques ou plus proximaux.

Je voudrais également remercier les membres de mon comité d'accompagnement, Isabelle Roskam et James Day, qui, avec leurs remarques constructives, leur soutien et leur enthousiasme, ont contribué à l'enrichissement de cette thèse. Thanks also to Stephan Van den Broucke and Jesse Preston, the two external members of my jury, for the enriching exchanges during my private defense.

Je souhaite également remercier la présidente de mon jury, Mariane Frenay. Merci pour ta disponibilité à différents moments de ce parcours, parfois plus difficiles, et merci pour ton écoute et ta bienveillance. Avoir pu commencer les tâches d'enseignement sous ton décanat a été inspirant et pouvoir clôturer ce bout de chemin en ta compagnie a un côté symbolique qui me donne l'impression que la boucle est bouclée.

Durant ces quelques années, j'ai pu faire de belles rencontres à la faculté, et je voudrais donc remercier tous mes collègues qui ont incontestablement fait de ce chemin de thèse une expérience unique et tellement enrichissante.

Tout d'abord, il y a les collègues avec qui j'ai pu échanger sur la recherche. Merci à la super équipe *Psyreli*, Magali qui a toujours été là pour moi, avec qui j'ai partagé tant de belles choses mais aussi des plus difficiles, et qui a toujours été de bon conseil, tant sur le plan recherche que sur le plan plus personnel ; Claire et Csilla avec qui une petite pause devenait l'occasion de refaire le monde (et du coup était moins petite) ; Filip, always ready to help. Thank you for all these exchanges and simply for being there. Don't forget to believe in yourself! Patty, dont c'est toujours un plaisir de retrouver la compagnie, ici ou ailleurs, ainsi que Carlos, Joanna, Jolanda, Marianne, Rob. Merci également à Jean-Marie Jaspard avec qui échanger lors des séminaires a toujours été un réel plaisir.

Ensuite, j'aimerais remercier toutes les personnes *CECOS* avec qui j'ai pu partager les premières années de mon parcours. Merci tout d'abord aux professeurs, Olivier C. (pour ton écoute attentive et les petits échanges au quotidien), Bernard, Ginette, Rafaele, Florence, Donatienne, Stéphanie et Vincent (ces quatre derniers dont je remercie également

la confiance qu'ils m'ont accordée dans le cadre des différents cours que j'ai eu à encadrer pour eux). Merci également à tous les doctorants que j'ai eu la chance de côtoyer durant ces 7 années, Dorothée (mon mentor assistantat, ma partenaire de danse après 18h, et également ma complice-détente-sur-un-coup-de-tête), Séverine (avec qui je me suis encore éclatée, hum, au JDA), Catia, Andy, Claudia, Tim, Jonathan D. (dont j'ai pu apprécier le réseau lors d'un après-midi au JDA), Caroline I., Evelyne, Marie, Géraldine, Edwine, Virginie, Gaylord, Gaëtane (merci particulièrement pour tes conseils stat), Christophe (avec qui j'ai pu échanger sur tellement de facette de ce boulot, et particulièrement sur les galères méthodo en recherche et galères étudiants en encadrement), Hélène (merci pour tous ces moments tant formels qu'informels et pour ta rigueur dans la gestion des différents cours), Mathias (avec qui ça a été un plaisir de collaborer sur le cours de prédiction).

Un tout grand merci pour toutes les personnes du « *deuxième* » qui m'ont accueillies pour ces trois dernières années, merci pour tous ces échanges lors des temps de midi ou au détour d'un couloir. Pierre P., Olivier L., Pierre M., Alexandre, Nicolas V., Stefan A. (merci pour les petits échanges quotidiens et ton aide précieuse sur le déclin cognitif) et merci à tous les doctorants avec qui j'ai passé de très agréables moments, Louise, Jory (salut Roger ! Vive les dinos, les sabres lasers et deeple ; pour ne reprendre qu'une partie succincte de nos sujets de prédilection), Vincent D. (merci pour tes mots justes et ta force tranquille), Mélanie, Gaëtan, Françoise (merci pour tes encouragements), Marie B. (quelle belle rencontre, merci pour tous ces moments d'encouragement et également pour tes précieux conseils de maman), Marie D., Pierre G., Marie P. (ma compagne jours fériés), Jessica VdB, Jessica M., Charlotte, Anne W., Anne K., Aurélien, Delphine, Aline C., Pierre B.

A côté de toutes ces personnes côtoyées dans mes activités de recherche, beaucoup d'autres m'ont accompagnées pour un bout de chemin plus ou moins long. Je voudrais tout d'abord remercier tous les étudiants à qui j'espère, j'ai pu apporter un peu de motivation et d'envie d'apprendre. Merci particulièrement à mes mémorands, Alexandre, Astrid et Kenza.

Avoir la chance d'être assistant c'est également avoir la chance de côtoyer et de travailler avec des collègues issus de multiples domaines. Merci aux professeurs pour leur confiance, certains ayant déjà été cités plus haut, ainsi que Dana, Moïra, Arnaud, Nathalie L. (un tout grand merci aussi pour ton soutien, et tes attentions, particulièrement lors du JDA), Matthieu V., Cédric T. (qui a été assistant quand j'étais étudiante, assistant quand j'étais assistante et chargé de cours pour ma dernière année, merci également pour ta disponibilité à répondre à l'une ou l'autre question stat de cette thèse). Je voudrais chaleureusement remercier tous les assistants que j'ai eu l'occasion de rencontrer, avec qui cela a été un réel plaisir de travailler. L'ambiance conviviale et collaborative qui a toujours émergé de nos réunions ont été la locomotive de mon parcours d'enseignement. Merci donc à Véro (franchement, nos réunions vont beaucoup me manquer, merci pour tous les bons conseils et le soutien infaillible ainsi que ta bonne humeur), Vanessa (toujours un plaisir de passer du temps en ta compagnie), Mikaël (aaaah, enfin plus de gazon à enlever de mes slides ; plus sérieusement tu as mené ce projet 9002 d'une main de maître, ce fut un réel plaisir d'être ton sbire), Stéphanie, Émilie, Aline W., Morgane (dommage que cette idée de labo sexo soit arrivée sur le tard, échanger avec vous fut un réel plaisir), François (merci pour toutes ces années au service des assistants et ta capacité à nous fédérer), Laëtitia et

Marie (merci pour ces supers moments, toutes ces heures de discussion et aussi votre soutien lors du JDA et de la rédaction de cette thèse).

Je voudrais également remercier les autres membres de la faculté sans qui tout ceci ne serait pas possible. Martine (pour ton aide précieuse, pour ta bienveillance et tes encouragements), Dominique D. (pour ta disponibilité et ton aide), Nadine (quel plaisir de partager un temps de midi en ta compagnie, et de pouvoir souffler 2 minutes à ta porte), Isabelle, Mélissa, Marianne B., Dominique H., Roland (merci pour le support technique, mais surtout merci pour ta présence tellement agréable et les échanges sur fonds de poissons transgéniques-fluorescents. Bonne continuation dans tes projets !) et Anne (merci pour ta disponibilité, ton aide logistique ainsi que les bons moments papote qui allègent grandement les heures passées à la photocopieuse).

Enfin, je ne peux m'empêcher de penser que cette thèse, je la dois également en grande partie au soutien que j'ai eu en dehors des murs de la faculté.

Premièrement Nath, comment ne pas parler de toi ? Et comment ne pas commencer cette dernière partie par toi ? Plus de 10 ans maintenant que nous arpentons les couloirs de cette chère faculté, qui nous a non seulement vues évoluer en tant qu'étudiantes, chercheuses, assistantes mais aussi en tant qu'amies. Ces années de thèse n'auraient jamais eu la même saveur sans ta présence. Écrire ces quelques lignes me fait réaliser tout le chemin parcouru, d'une première bière partagée au Cercle Psycho, de nombreuses heures assises dans les divers Socrates, de guindailles déjantées, de ta présence comme témoin à mon mariage et maintenant comme marraine de ma petite Élise. Une sacrée page se tourne, et je me surprends régulièrement à me demander comment je vais faire sans toi par la suite. Merci de m'avoir boostée, réconfortée, encouragée, motivée.

Ensuite, j'ai également reçu un soutien infaillible de la part des Pentades, qui ont suivi non sans une certaine appréhension l'avancement de mon parcours. Les filles, merci pour toutes ces années de coaching, depuis les versions latines jusqu'à la rédaction de cette thèse et surtout merci pour cette décade et demi d'amitié et pour les dizaines à venir. Sans vous, je ne serais probablement pas là ! Merci aussi à Lucas, Anne, Ancé et Émilie. Je tiens également à remercier les membres du Squadron, bande d'amis tellement importante, avec qui des discussions plus ou moins sérieuses autour de mes recherches m'ont permis tantôt de décompresser, tantôt d'avoir une idée et d'avancer. Merci également à Maëlle pour la relecture de la version anglaise.

Merci à ma belle-famille, qui a passé un nombre d'heures assez important à écouter mes avancements, souvent autour d'un bon verre. Merci pour l'intérêt que vous avez porté à mes recherches et à l'avancement de ma thèse. Un merci tout spécial à Catherine pour la couverture de cette thèse.

Je tiens évidemment à remercier mes parents, sans qui je n'aurais jamais pu réaliser ce parcours. Je sais que ça n'a pas toujours été facile pour vous, mais un ENORME merci d'avoir toujours cru en moi, même quand moi je n'y croyais plus. Si je termine cette thèse ce n'est pas seulement pour moi mais aussi pour vous, pour vous montrer que malgré tout, le message de ne rien lâcher et d'aller jusqu'au bout est bien passé. Merci également à votre côté Babou et Nana, sans lequel ce travail aurait tout simplement été impossible à finir. Les filles ont beaucoup de chance de vous avoir ! Gee, merci d'être aussi présente, la vie serait

---

bien moins colorée sans toi. Merci aussi à ton rôle de Tata Gee (avec tonton John), tellement important pour les filles.

Enfin, ces 7 années de thèse ont aussi vu l'évolution de ma petite famille. Ma Zoé, t'avoir à mes côtés est une réelle force qui me permet d'avancer. Ton énergie, tes sourires et tes câlins ont permis de rendre ces moments de rédaction tellement plus faciles, permettant de relativiser l'importance des choses. Élise, j'ai commencé à rédiger ma thèse avec une sacrée deadline, ta venue au monde. Quoi de plus motivant (et pressant !) pour avancer ?! Maintenant que j'écris ces lignes, tu es dans mes bras, ce qui marque le début d'une nouvelle histoire qu'il me tarde de découvrir.

Edwin, ces dernières lignes sont pour toi. Merci pour ton soutien, ta confiance en ma capacité à mener à bien un tel projet. Merci pour ces heures passées à me rassurer et à me booster, ainsi que pour ta grande capacité à mettre en perspective mes recherches. Ces 7 années ont été riches pour nous, tant sur le plan professionnel que personnel. Nous avons continué à nous construire et nous avons fondé une famille. Merci d'être un ami si complice, un mari si prévenant et un papa tellement attentionné. Je t'aime.



## **General Introduction**

---



Religion and sexuality are central realities in people's lives. Indeed, religion has always been an important component of self for many people as well as a strong motivation to engage in a multitude of behaviors (Saroglou, 2014). Today, about 84% of the world's population declares itself affiliated to a religion (Pew Research Center, 2017), and still nearly 60% in secularized countries such as Belgium (Havermans & Hooghe, 2011) or France (Institut Montaigne, 2016). Sexuality, on the other hand, has as its primary goal the survival of the species, even if it serves other purposes such as bonding or pleasure (Gray, 2013).

These two realities of religion and sexuality involve various dimensions of the human being, and the important combination of factors that shape them makes them difficult to define. Religion can be defined as the co-presence of beliefs, ritualized experiences, norms and groups that refer to what individuals perceive as transcending the human (Saroglou, 2014). Sexuality, at the individual level, could be defined as a whole integrating desire, behaviors, attitudes, identity, fantasies, preferences, orientation, emotions, decision-making. These individual characteristics of sexuality are confronted with social characteristics, such as mores, laws, standards, communities, institutions or culture (Tolman & Diamond, 2014). What appears to belong to an individual level is in fact closely linked to a series of social and cultural processes, identified within a restricted circle within the couple or the family, depending on a broader context, such as social norms that promote a certain expression of sexuality and restricting others.

At first glance, these two realities may seem complementary, serving distinct functions, even if sometimes they intermingle. However, it appears that most religions maintain a restrictive discourse about sexuality, defining norms related to "when? with whom? how? where? why?" (Regnerus, 2005). In other words, religion will attempt to control this aspect of people's lives (Hunt & Yip, 2012). The heart of this control could lie in the fact that one of the most important aspirations of religion is to be able to place the human above the animal, and that, to do so, material considerations or even physiological needs must be controlled and set aside. Abrahamic religions, for example, have a very strong duality of body/mind, sacred/profane, material/spiritual or terrestrial/divine (Yip, 2010). In this sense, sexuality, which responds to a physiological need, being rooted in terrestrial considerations and which recalls the animal condition of humans, must be controlled. In this context, only reproductive sexuality can be tolerated (Bullough, 2003). However, it is accepted, at least in modern societies, most of which are also based on secular principles and emphasizing autonomy and free expression, that sexuality is no longer something that is restricted, but is rather valued (Lehmiller, 2014). Therefore, theological developments have occurred, at least in some Western societies, highlighting a sexuality through which humans will create bonds and develop their attachment (Machacek & Wilcox, 2003; Robertson, 2006).

These realities that are religion and sexuality, by their importance in the lives of individuals, have aroused much research. Aspects of sexuality related to religion that have particularly interested researchers are homosexuality (e.g. Adamczyk & Pitt, 2009; Doeblér, 2015, see also Saroglou, 2018 for a review of the literature) and the occurrence of first sexual intercourse in adolescents (e.g. Meier, 2003; Rostosky, Regnerus, & Wright, 2003; Vasilenko & Lefkowitz, 2014). In addition to these predilection topics, psychology research on the religion-sexuality link has also investigated how religion (often apprehended by affiliation or religiosity) is going to be associated with sexual attitudes (Beckwith & Morrow, 2005; Brelsford, Luquis, & Murray-Swank, 2011), sexual behavior

(Regnerus & Uecker, 2007; Rowatt & Schmitt, 2003) or marital and sexual satisfactions (Atkins & Kessel, 2008; Lambert & Dollahite, 2006). In all cases, religion (in its various forms) has been shown to inhibit (tolerance towards) sexuality.

The link between religion and sexuality might seem quite simple to understand: religion, by its ideas, norms and values, will generate a restrictive sexuality. However, we have seen from the definitions of these two realities that they encompass many dimensions of the human being. We can therefore ask ourselves whether this relationship is not more complex than is usually assumed. What is the *direction* of this link? Will religion have an impact on sexuality, or can sexuality also have an influence on religion? Can't psychological *mechanisms* explain, in part, how this link works? Finally, is the negative association between these two realities found only among believers and/or in a context in which religion occupies a predominant place, or can it also *extend* to a secular context?

In **Chapter 1** of this thesis, we will conduct a literature review of existing research. Thus, we will develop the relationship that religion has with sexual attitudes and sexual behaviors. We will also discuss the specificity of spirituality on these two facets of sexuality before discussing the extent to which marital and sexual satisfactions can be associated with religion. Then, we will discuss some psychological mechanisms that we think it can explain part of this link. Finally, we will briefly develop the perspectives of different religions on sexuality before raising the limits of literature and presenting our research questions. The empirical part of this thesis will aim, in the form of scientific articles, to answer the research questions raised. **Chapter 2** will focus on the question of how the relationship between religion and sexuality works, testing various psychological mechanisms that may explain it. In the same chapter, the question of the extent and functioning of this relationship with a Muslim population will also be addressed. In **Chapter 3** we will evaluate, through dyadic analyses, the influence of the religiosity of each of the partners of a couple on their levels of conjugal and sexual satisfaction as well as on their propensity to have an orientation of love centered on commitment or on the contrary on passion and intimacy. **Chapter 4** will present two experimental studies testing the extent to which the activation of religious ideas shapes the recall of a past sexual experience, as well as the motivation to engage in sexuality. The last chapter of the empirical part, **Chapter 5**, will address the less intuitive causal direction from sexuality to religion. Finally, the results of these different studies will be discussed in the **general discussion**.

## **Chapter 1**

### **Current state of knowledge and research questions**

---



---

## 1. Religion and sexuality: Current state of knowledge

As discussed in the general introduction, religion and sexuality are two central concepts in people's lives. As a result, a significant number of studies have examined the link between these two realities in order to better understand how these seemingly distant spheres influence each other and shed new light on them.

In this chapter, we will examine the link between religion and sexuality as it is studied in the literature in order to draw up an inventory of the question. First, we will present studies examining sexual *attitudes*. We will then focus on sexual *behavior*, and then on the influence of religion on the *couple*. We will then look at the psychological *mechanisms* likely to influence the religious-sexual link before addressing the point of view of the *different religions*. We will highlight the divergent and convergent points in the literature in order to identify possible limitations and to guide the objectives pursued in this thesis.

### 1.1 Attitudes

Attitude is a concept that has been studied extensively in psychology, because it is a disposition that will or will not favor the occurrence of a response, a behavior, in front of an object, a person or an event (Eagly & Chaiken, 2007; Krosnick, Judd, & Wittenbrink, 2005; Petty & Cacioppo, 1986). Attitude is essentially evaluative and will therefore give rise to a positive or negative assessment of a behavior (Ajzen, 2005; Armitage & Conner, 2001).

Attitudes of individuals are formed through contact with different sources (parents, peers), and sexual attitudes are no exception. Socialization with sexual attitudes begins very early in childhood, and the family environment in which the child evolves carries important norms, values and behaviors in the future development of sexuality (Thornton & Camburn, 1987). In this context, the place of religion in the family system seems to be of some importance and research has shown that families tend to socialize their children to religious practices (Lambert & Dollahite, 2010).

Religion thus has a profound implication in the formation of sexual attitudes. Indeed, because of its values, norms and teachings in favor of limited, procreation-oriented sexuality in the context of heterosexual marriage, religion tends to generate restrictive sexual attitudes (Beckwith & Morrow, 2005; Brelsford et al., 2011; Le Gall, Mullet, & Shafighi River, 2002). This impact of religion on conservative sexual attitudes can be quite significant, as it seems to explain about 30% of the variance of these attitudes (Lefkowitz, Gillen, Shearer, & Boone, 2004). Religion therefore has a link with conservative sexual attitudes in general, but also with specific attitudes, which we will develop below, and which concern behaviors that undermine the norms and values of heterosexual sexuality that would take place within married heterosexual couples.

Before focusing on specific sexual attitudes, it is important to point out that the relationship between religion and restrictive sexual attitudes does not seem to be limited to a particular context, but is found across different cultures and religions (Schmitt, 2003, 2005; Schmitt & Fuller, 2015). However, this effect, and in particular its size, could depend on various parameters.

First, age has been shown to have a moderating effect on religious-sexual attitudes: older believers are reported to have less permissive attitudes than younger believers (Le Gall et al., 2002).

Second, gender also plays a key role in the establishment of sexual attitudes. Numerous studies have indeed found that women show more restrictive attitudes towards sexuality than men (Petersen & Hyde, 2011; Schmitt, 2005). These differences could be explained by different factors. First, in light of evolutionary theories, and more specifically the theory of parental investment (Trivers, 1972), women tend to favor a more restricted sexuality, because sexual activity costs them more in terms of investment than men (gestation, child care). Second, women are more flexible in their "erotic plasticity" and sexual attitudes than men and will therefore be more subject to social, cultural or situational influences (Baumeister, 2000). Finally, studies indicate that women participate more in religious services and more frequently report the important role of religion in their daily lives than men (Trzebiatowska & Bruce, 2012) and religions seem to target women more than men in their discourses about sexuality (Baumeister & Twenge, 2002).

Finally, certain forms of religiosity (intrinsic religiosity, conservatism, and religious fundamentalism) will have a stronger weight than other aspects of religion on sexual attitudes (Beckwith & Morrow, 2005; Lefkowitz et al., 2004).

### **1.1.1 Premarital sex**

There are several types of premarital sex, but this section will focus on adolescent sexual experiences. This choice was made following the specificity of this population regarding the stakes of an active sexuality at a young age, the position of religion on chastity as well as the consequent number of studies looking into this problem. Sexual relations taking place outside the couple (extra-marital relations and casual relations) will be treated in the following section devoted to attitudes towards different sexual practices.

Attitudes influenced by religion regarding premarital sex are among the most studied in the literature. This is partly due to the challenges of active sexuality among young people, including the risk of contracting a sexually transmitted disease or having an unintended pregnancy. Indeed, late adolescence is a crucial period in the development of sexuality during which scripts are put in place that will determine future sexual behavior (Halpern, Waller, Spriggs, & Hallfors, 2006; O'Sullivan & Thompson, 2014). The attitudes that young people develop towards sexuality are most likely to shape the healthy (or unhealthy) sexual behaviors they later adopt (Morrill, Ickovics, Golubchikov, Beren, & Rodin, 1996); their environment, as well as their education, will be crucial in the development and maintenance of those behaviors.

Religion generally promotes abstinence before marriage, which can have a protective effect against unwanted pregnancy or infection. Despite the trend towards liberalization of premarital sex that has been taking place since the late 1970s (Treas, 2002), studies consistently show that believers report more negative attitudes towards premarital sex (Cochran & Beeghley, 1991; Pluhar, Frongillo, Stycos, & Dempster-McClain, 1998) and that this non-acceptability of premarital sex is reflected in different religious denominations (i.e. Catholic, Protestant, Muslim and Buddhist) except for Buddhist women (Cochran & Beeghley, 1991; de Visser, Smith, Richters, & Rissel, 2007),

suggesting that premarital chastity values are internalized by believers regardless of their affiliation.

### ***1.1.2 Sexual relationship outside the context of the couple***

First of all, religion is more tolerant of sexuality taking place within a heterosexual marriage; this sexuality is attached to one of the most deeply rooted values, namely fidelity (Summers, 2014). As a result, very negative attitudes are formed towards extramarital behavior. Treas (2002) indeed pointed out that 80% of a large sample (from the General Social Survey, USA, between 1972 and 1998) judged extra-marital relations to be unacceptable; these attitudes having remained stable over almost three decades (1972-1998). These findings are consistent with other studies that have shown that more religious people have more conservative attitudes toward infidelity (Cochran & Beeghley, 1991; Smith, 1994).

Second, having sex outside marriage does not always mean being unfaithful. Many people live together without marriage. However, negative attitudes about this life choice are found among believers and especially those attending weekly religious services (Davidson, Moore, & Ullstrup, 2004).

### ***1.1.3 Sexual practices***

Practices other than vaginal intercourse are more or less tolerated by religion, and, in our opinion, according to their probability of resulting in childbirth. Oral sex, for example, if it precedes full sexual intercourse, can be practiced between spouses (Janus & Janus, 1993). However, Davidson, Moore, and Ullstrup (2004) found that women with a higher level of religiosity have a negative attitude toward these behaviors and believe that they should not be practiced.

The practice of anal sex, a practice rather poorly perceived by religion not only because it does not lead to procreation, but also because it approaches animal behavior, has also been shown to be judged negatively by believers (Davidson et al., 2004).

One last practice that we will address here is masturbation. This sexual behavior is often seen as shameful and maladjusted, a view based on religious doctrine defending sexuality for reproductive purposes (Patton, 1985; Smith, Rosenthal, & Reichler, 1996). Like other non-reproductive behaviors, a permissive attitude toward masturbation has been found to negatively correlate with religiosity (Davidson, Darling, & Norton, 1995; Sümer, 2015).

### ***1.1.4 Homosexuality***

Above all, homosexuality is the sexual expression most subject to negative attitudes within the context of religion. At the research level, the numerous studies that focus on the link between religion and prejudice against homosexuals all point in the same direction: the vast majority of dimensions of religiosity are positively correlated with negative attitudes toward homosexuals (Saroglou, 2018; Whitley, 2009). Interestingly, this link is even maintained by controlling different variables such as income, political conservatism, political orientation, support for traditional gender roles and intelligence (Saroglou, 2018).

This strong aversion could be explained in different ways. On the one hand, religious people would be more likely to think that sexual orientation is a choice, not a genetic determination (Whitehead, 2010). However, these authors indicate that after controlling for a variable measuring the attribution of homosexuality, the harm remains present. On the other hand, religion gives meaning to personal and societal values, which can lead to prejudice against individuals or groups who do not support the same values (Hunsberger & Jackson, 2005). Indeed, traditional family values have been found to predict homophobia (Lehmiller, Law, & Tormala, 2010). Being perceived as a threat to the system of values conveyed by religion, homosexuality can even lead to disgust and moral, even physical condemnation of the person (Mavor & Gallois, 2008; Olatunji, Haidt, McKay, & David, 2008; Rozin, Haidt, & McCauley, 2016; Rozin, Lowery, Imada, & Haidt, 1999). However, these elements are far from explaining the full variance of the negative link between religiosity and negative attitudes towards homosexuality.

### **1.1.5 Conclusion**

Researches presented in this first section show that religion shapes sexual attitudes of believers. These attitudes touch on various areas of sexuality, such as the choice to engage in active sexuality, behaviors, couple's lifestyle choice or sexual identity. The studies presented in this section consistently and coherently indicate that there is a negative link between religion and sexual attitudes.

It is interesting to note that certain values or norms related to sexuality are not limited to the religious context, but are found in societal traditions. This is the case, for example, of fidelity, which is a matrimonial obligation under the Belgian Civil Code (Article 213 of the Civil Code). Similarly, some countries condemn, to varying degrees, certain sexual behaviors such as homosexuality (e.g. homosexual union is only allowed in 25 countries against 74 states condemning homosexuality, 13 of which carry the death penalty for homosexuality) or extramarital relations.

## **1.2 Behaviors**

Attitudes are very useful to consider in understanding behaviors, but the relationship between these two concepts is not always clear. Some researchers are in favor of attitudes shaping behavior (DeLamater & MacCorquodale, 1979; Fishbein, 1966; Hull, Hennessy, Bleakley, Fishbein, & Jordan, 2011; Roland, 2017), others will rather support the predominant role of context as influencing behavior, with attitudes often inconsistent, which will eventually adjust to behavior to reduce this dissonance (Baumeister, 2000; Kleinke, 1978). Finally, some researchers will reconcile these two approaches by proposing an interactionist perspective in which different variables will define behaviors (Kelman, 1974; Reiss, 1967; Severy, Brigham, & Schlenker, 1976). A cross-temporal meta-analysis (Wells & Twenge, 2005) of the link between sexual attitudes and sexual behavior, covering some 530 studies, spread over more than 50 years, indicates that these two concepts are extremely linked, but that this link varies according to gender ( $\beta$ s between .15 and .35 for women and .00 and .25 for men). For (young) women, attitudes and behaviors would have reciprocal influences, while for (young) men, it is mainly the attitudes developed during their childhood that will determine their behaviors. Similar results were found by Luquis, Brelsford, and Rojas-Guyler (2012). This may be explained by the greater erotic plasticity

in women than in men, by the greater social influence for women, or by the fact that changes have been more widespread for women regarding their social, occupational, or even certain personality variables such as masculinity (Diekmann & Eagly, 2000; Twenge, 1997; Wells & Twenge, 2005).

Beyond the influence of attitudes, but like these, sexual behavior is very sensitive to the individual's environment, the norms that are conveyed as well as the people around them. Several theories propose social norms as one of the factors that may or may not favor the occurrence of behavior. This is the case of the Planned Behavior Theory (Ajzen & Fishbein, 1977), which will integrate social norms (as well as attitudes and perceived behavioral control) as predictors of the intention to engage in behavior that itself will be a predictor of that behavior. Using this model, it has for example been shown the importance of social norms in condom use (Albarracín, Johnson, Fishbein, & Muellerleile, 2001) or on the delay of the first sexual intercourse (Hull, Hennessy, Bleakley, Fishbein, & Jordan, 2011). The theory of social norms (Perkins, 2002) suggests that the reference group is a powerful agent regarding the choices that individuals will make about their behaviors and therefore these behaviors will be shaped by the norms of that group. Helm and colleagues (2009) tested, by comparing the number of sexually active students in a conservative university with national data, the extent to which religious norms will influence sexual behavior. They noted that students were 40-45% less sexually active in a religious context, which, according to these authors, indicates the power of social norms.

Results from other researches support this, with family and religious practices shown to be associated with the sexual behaviors of young adults (Regnerus & Uecker, 2011; Simons, Simons, & Wallace, 2004). An environment steeped in religion will therefore be interesting to take into account, because it provides many norms related to sexuality and in particular how to practice it properly. Moreover, through the enhancement of asceticism, going as far as celibacy in the Catholic religion, religion encourages sexual restriction. This restrictive vision is not only reserved for the higher hierarchical positions of a religion, but is expected of every believer. Consequently, many sexual behaviors will be modulated by religion, such as abstinence, sexual relations without commitment or various sexual practices.

### **1.2.1 Abstinence**

The factors that will favor or not the occurrence of the first sexual intercourse have been the focus of numerous studies. As explained in the section on attitudes about premarital relationships, this profusion of research is in response to the issues of active sexuality among young people (STIs, unwanted pregnancies). Beyond attitudes, it is interesting to see whether religion actually has a protective effect on the occurrence of first sexual intercourse.

Regarding abstinence, the population of interest in existing literature is young adults. It is indeed during the transition period between adolescence and adulthood that sexuality emerges, with approximately 80 to 90% of 18-23 year-olds reporting having had sexual intercourse (Halpern et al., 2006; Regnerus & Uecker, 2011). This can be explained by a favorable context (e.g. higher education, less parental supervision, more opportunities) in which there is growing interest in intimate and loving relationships (Montgomery, 2005). It is also a time when a range of sexual attitudes can be reconsidered as individuals make

decisions about their sexuality (Claxton & van Dulmen, 2013). Youth religiosity will play a key role in the decision to have sex. Youth reporting higher religiosity (and also attitudes against premarital sex) are more likely to be abstinent (Halpern et al., 2006; Lefkowitz et al., 2004; Meier, 2003; Pluhar et al., 1998), whether male or female (Halpern et al., 2006), even within an exclusive and lasting relationship (Barry, Willoughby, & Clayton, 2015).

Some researchers have used empirically validated theories to assess the link between religiosity and sexuality. Hull et al. (2011), for example, used the Planned Behavior Theory to assess the relationship between religiosity and delayed adolescent sexual behaviors. They highlighted the predominant role of attitudes towards sexuality and, to a lesser extent, the importance of social norms. The sense of personal effectiveness, which is also part of the model, does not seem to play a role. These results seem to be confirmed through various studies, highlighting the fact that perceived social norms (especially among peers, and to a lesser extent among parents) as well as negative attitudes towards sexuality and in favor of abstinence will lead to fewer sexual behaviors among adolescents (see Buhi & Goodson, 2007 for a review of the literature using as inclusion criteria the use of an integrative model explaining the sexual intention or behaviors of adolescents).

### **Risky sexual behaviors**

Religion, even if it delays the onset of first sexual intercourse, does not always have a protective effect. The position adopted by many religions in the face of different contraceptive methods, in the name of unfailing abstinence, can lead to problematic attitudes towards sexuality. First, attitudes towards contraceptive methods play an important role in their effective use (Walcott, Chennville, & Tarquini, 2011). Given the emergence of negative attitudes towards contraceptive methods such as condoms, believers will be more likely to use other methods, such as withdrawal, that do not protect against STIs and have a proven lack of effectiveness as contraceptives (Pluhar et al., 1998). Furthermore, it has been shown that people who participate in religious services perceive AIDS as less threatening than people who see their religion as having a role in their daily lives or than non-believers (Lefkowitz et al., 2004) and may therefore be less able to protect themselves during intercourse. It is important to note that this effect of religiosity on contraceptive use is also found among youth from all socio-economic backgrounds (Regnerus, 2005), as well as in secularized countries such as France (Moreau, Trussell, & Bajos, 2013).

#### ***1.2.2 Sexual relationship outside the context of the couple***

Three types of sexual behavior taking place outside the couple particularly retained our attention, by their links with religiosity and more precisely their opposition with the family and marital values which religion promotes. These will therefore be addressed in this section. These include extra-marital relationships, casual relationships, and multiple partners.

### **Extra-marital relationship**

As already mentioned in the section on attitudes towards extramarital relationships, fidelity is highly valued by religion. This valorization is beneficial, among other things by the fact that it promotes marital satisfaction (Vaaler, Ellison, & Powers, 2009). The

importance of fidelity transcends the boundaries of religion, with the majority of couples expecting monogamy from their partners (Treas & Giesen, 2000). However, many people engage in extramarital relationships (Allen, 2005; Wiederman, 1997) whether they are simply in a couple or married (Wiederman & Hurd, 1999). The evolutionary perspective can provide some explanations for this behavior. Indeed, infidelity could reflect a certain partner selection strategy, allowing individuals to evaluate potential long-term partners (Buss & Schmitt, 1993), as well as refine their preferences (Greiling & Buss, 2000), or even find a better partner (Symons, 1979), always with a view to increasing the quality of offspring. Nevertheless, religiosity seems to be a "protective" factor of extra-conjugality. Believers report fewer extramarital relationships than non-believers (Greeley, 1994). This could be due, among other things, to the fact that monogamy encouraged by an individual's religion will improve the couple's network and, as a result, social support (Weeden & Kurzban, 2013). In addition, people will reward those who pursue the same sexual strategies and ostracize and devalue those who adopt different strategies (Weeden, Cohen, & Kenrick, 2008) or permissive attitudes, including those related to extra-conjugality (Simpson & Gangestad, 1991).

### **Casual sex**

Another type of sexual behavior outside the couple that deserves attention is casual sex, that is, sex that occurs in a relationship without commitment. This behavior has been linked to religiosity, such as by Rowatt and Schmitt (2003) who have highlighted the antagonistic associations between the intrinsic and extrinsic orientations of religiosity and the search for short-term relationships. Indeed, these authors have found extrinsic religiosity to be associated with more initiation of relationships without commitment, as well as with more search for relationships with people already in a relationship; whereas intrinsic religiosity is negatively related with these aspects of socio-sexuality.

### **Number of partners**

In addition to extramarital behaviors and the search for casual sex, some studies have examined the relationship between religiosity and the number of sexual partners. It appears that religiosity is negatively related to the number of sexual partners (Barkan, 2006). This association can be partly explained by restrictive attitudes (Barkan, 2006; Townsend & Wasserman, 2011), but also depends, as does the search for relationships without commitment, on religious orientation, with people with an intrinsic orientation reporting a desire for fewer partners (Rowatt & Schmitt, 2003). It is also interesting to note an evolution in the number of sexual partners (from 18 years old) ranging (on a scale from 0 to 8) from 3.03 for men and 2.31 for women in 1980 to 4.18 for men and 3.03 for women in 2010, indicating a difference between generations (Twenge, Sherman, & Wells, 2015).

On the basis of the various studies on the association between religion and sexual behavior outside the couple, it emerged that this association is rather negative, although it may depend on the orientation of the religiosity of individuals, their gender or even their generation. In the rest of this point concerning behaviors, we will approach the question of different sexual practices, by putting forward what are their links with religiosity.

### **1.2.3 Sexual practices**

Compared to studies that focus on youth sexuality and factors that may delay first intercourse, there are far fewer studies that attempt to understand the relationship between religion and adult sexual behavior. Yet religion's place in the lives of individuals is no less preponderant than in adolescence, and it can, as we will see below, influence the variety and frequency of behaviors of sexually active people.

Of the various sexual acts, *vaginal intercourse* is perhaps the least subject to religious restrictions. This could be due to the fact that this behavior is necessary for procreation, and therefore valued under certain conditions, which we have already mentioned several times, namely heterosexual marriage. However, even if this behavior is more tolerated, studies show a negative link between religiosity and vaginal intercourse (Farmer, Trapnell, & Meston, 2009). More specifically, people who are active and participating in religious services will have less frequent sexual intercourse (Zaleski & Schiaffino, 2000). It is also interesting to note that, although believers have negative attitudes about premarital sex, few people expect marriage and most individuals enter sexuality before marriage (Halpern et al., 2006).

The practice of *oral sex*, like the other practices developed below, is not valued because it does not lead to a possible procreation. However, it can be tolerated if it precedes complete sexual intercourse, which can lead to childbirth (Janus & Janus, 1993). Laumann (1994) points out, however, that women who report being unbelievers or liberal Protestants will be more likely to have given and received oral-genital stimulation than Protestant conservative women. This negative association is also found in the results of the study by Farmer and colleagues (2009), again only among women.

Alongside sexual practices such as vaginal intercourse or oral sex, which are done as a couple, one practice that has caught our attention is *masturbation*. Although commonly practiced (about 60% for women and 85% for men; see Lehmiller, 2014) this practice remains a taboo subject and a sin in the eyes of religion (Bullough, 2003). This may be due to the fact that, beyond nonprocreation, it is often perceived as reflecting compulsive sexuality (Wiederman, 2004). Although masturbation remains one of the most practiced sexual behaviors, a higher degree of religiosity has been found to be negatively associated with masturbation (Laumann, 1994). In addition, people of faith who engage in this sexual behavior are more likely to feel guilty (Davidson & Moore, 1994).

Studies on the practice of *anal sex* and its link with religiosity are very few. This may be due to various factors. On the one hand, perhaps this practice is more taboo than the others. On the other hand, the prevalence of people reporting engaging in this type of behavior is very low (about 14%). It is interesting to note that socio-demographic variables such as age, education, and ethnicity may influence the occurrence of this behavior (Laumann, 1994). Religiosity also seems to come into play, with women being more religious and reporting less anal intercourse (Farmer et al., 2009).

### **1.2.4 Conclusion**

As with attitudes, religiosity seems to have a role in the behavioral expression of sexuality and will tend to restrict its variety and frequency. This is not always negative for the health and well-being of individuals, abstinence among young people being for example

the best way to prevent sexually transmitted infections and unwanted pregnancies. There are, however, some negative impacts of religiosity, on the one hand by preventing individuals from exploring their sexuality, and on the other by leading them to engage in risky sexual behaviors.

The results presented here may also suffer from certain limitations. A first may be found in the populations studied. Indeed, most studies interview relatively young people (around 20), and studies indicate that behavior tends to vary with age or gender (Lehmiller, 2014). Moreover, some studies will highlight a difference in affiliation, or differences according to the orientation of religiosity (e.g. Farmer et al., 2009; Laumann, 1994; Zaleski & Schiaffino, 2000).

However, even if dissimilarities appear between studies, it is important to note that the association between religiosity and sexual behavior remains mostly negative, and that it is generally more a difference in intensity of effect than a change in meaning of the relationship.

### **1.3 Specifications of spirituality on sexual attitudes and behaviors**

The studies presented so far show an indisputable link between high religiosity and restricted sexual attitudes and behaviors. However, some characteristics of spirituality in relation to religion may lead to different associations with sexuality (Murray-Swank, Pargament, & Mahoney, 2005; Saucier & Skrzypińska, 2006). These characteristics refer to a more individualized way of achieving all kinds of sacred or existential goals, such as the search for meaning, unity, inner potential or connection with others or the world around the individual (Zinnbauer & Pargament, 2005).

Some studies have looked at the specific associations that spirituality has with different components of sexuality. According to Burris, Smith, and Carlson (2009), spirituality, involving an interconnected and harmonious vision of the human being could lead individuals to see in the sexual act transcendent qualities and, therefore, may have quite different implications of religion on sexuality.

With regard to sexual attitudes, having a spirituality oriented towards the existential perspective will promote liberal attitudes towards sexual practices (Beckwith & Morrow, 2005). These same authors point out, however, that among people who believe in the importance of leading a spiritual life the opposite effect will be observed, since they have conservative attitudes. This last link has also been emphasized by taking into account the spiritual connection with God (Brelsford et al., 2011).

The association of spirituality with sexual behavior is also different from that of religion. Indeed, Burris and colleagues (2009) showed a consistent and positive relationship between spirituality and number of partners, frequency of vaginal intercourse, and frequency of intercourse without condoms among women. Opposite results have been highlighted by Holder and colleagues (2000), namely that spirituality (measured as the interdependence between the individual and family/friends) is negatively related to engaging in sexual behaviors. These conflicting findings suggest that the effects of spirituality can be multiple when it comes to its association with sexuality, with some forms of spirituality promoting sexual behavior and others restricting it.

The associations between spirituality and the different facets of sexuality developed above (attitudes, behaviors) therefore do not seem stable. This could be due to the different measures of spirituality used throughout the studies (and within the studies themselves). Indeed, a spirituality connected to God (as measured by Brelsford et al., 2011), or interdependent of his family (as measured by Holder et al., 2000) is quite close to classical religious socialization, and could therefore have the same consequences as measures of religiosity (importance of religiosity, participation in service). On the contrary, a spirituality oriented towards the search for experience, for existential quest (as measured by Burris, et al., 2009 or by Beckwith & Morrow, 2005) is more distinct from strictly religious aspirations and therefore, can lead to different results than those usually associated with religiosity.

#### **1.4 Religion in the context of the couple**

As discussed so far, religion plays an important role in the development of individuals' sexual attitudes and behaviors. Beyond these more person-focused aspects of sexuality, other aspects, such as marital and sexual satisfaction, can also be impacted by religious ideas, norms and values.

Religion places great emphasis on family values, emphasizing the importance of children and a harmonious couple's life. To help believers in their family life, religion will put in place guidelines on the roles to be occupied by each of the partners or the education of the children. In a meta-analysis comprising 94 studies between 1980 and 1999, Mahoney, Pargament, Tarakeshwar, and Swank (2001) highlighted the role of religiosity as a protective factor of divorce ( $r = -.082$  for global religiosity and  $r = -.125$  taking into account only church attendance) as well as as a facilitator of marital functioning ( $r = .15$  when a finer measure of religiosity is used (e.g. importance of religion and frequency of prayer) ;  $r = .074$  taking into account only church attendance) even if, as pointed out by the authors, the effects were quite modest. As a result, they also investigated the extent to which church membership would accentuate this relationship and found a more important relationship for this sample ( $r = .27$ ) than for a community or national sample ( $r = .11$ ).

In addition to these guidelines, religion will also support the importance of faithfulness (e.g. "You shall not commit adultery"; Exodus 20:14; Deuteronomy 05:18). However, in a country where religion occupies an important place in the public space (as in the United States), researchers wonder about the divorce rate which remains high. Numerous studies have therefore examined the possible causes of separation and have identified marital and sexual satisfaction as key factors (Vaaler et al., 2009) in the well-being of both individuals and families (Stack & Eshleman, 1998).

Before considering the specific influences of religion on marital and sexual satisfaction, it is important to consider that this satisfaction is not stable over time (Rollins & Feldman, 1970; Shahhosseini, Gardeshi, Poursaghar, & Salehi, 2014) and that this fluctuation may depend on different factors, both intra-individual (such as cognitions, affects or social support) and socio-demographic and cultural (such as number of children, stressors, socio-economic status or religion) (Bradbury, Fincham, & Beach, 2000; del Mar Sánchez-Fuentes, Santos-Iglesias, & Sierra, 2014).

### 1.4.1 Marital satisfaction

Marital satisfaction is defined as a person's subjective overall perception of the quality of their relationship with their loving partner (Li & Fung, 2011) and is one of the most studied variables in the field of marriage and family (Spanier & Lewis, 1980).

Previous studies have shown that many variables are involved when it comes to marital satisfaction. Indeed, Bradbury, Fincham, and Beach (2000) conducted a review of the literature and put forward that cognitions, affects, behavioral patterns, social support or physiological aspects (e.g. blood pressure, heart rates) will come into play. Moreover, these authors point out that the context (having children, parental background, attachment, life stressors and transition, social and institutional context) in which couples evolve will also influence the conjugal satisfaction of partners. To these determinants, other research adds the importance of communication between partners (Karney & Bradbury, 1995; Zhaoyang, Martire, & Stanford, 2018; see Lavner, Karney, & Bradbury, 2016 for link directionality), emotional regulation (Bloch, Haase, & Levenson, 2014) or self-disclosure (Zhaoyang, et al., 2018).

The interest in studying religiosity in relation to marital satisfaction stems from the fact that family norms and values seem to promote greater marital satisfaction. The authors specifically identify two predictors by which religion will promote marital satisfaction. First of all, by encouraging proper self-regulation, religion will promote the loyalty of partners. Being faithful to one's partner is often a rule that partners set for themselves when they make the decision to enter into a relationship (Buss & Shackelford, 1997; Singh, Walton, & Williams, 1976; Smith, 1994; Thornton & Camburn, 1989; Treas & Giesen, 2000). Violation of this rule can lead to serious harm at either the relational or individual level (Jones, Moore, Schratter, & Negel, 2001) and has been associated with a very high sentence (Allen, 2005). Nevertheless, in the United States, about 22 to 25% of men and 11% to 15% of women would engage in extramarital relationships (Allen, 2005)<sup>1</sup>. Religion, serving as a protective factor of fidelity, will therefore limit relational damage and promote marital satisfaction. It has been shown that, regardless of religious denomination, the prevalence of extramarital relationships is higher among non-believers than among believers (Greeley, 1994). However, it is not very clear whether marital satisfaction precedes fidelity or whether fidelity precedes marital satisfaction: Atkins and Kessel (2008) showed the moderating effect of marital satisfaction between religiosity and infidelity, with people being very happy in their couple with fewer extramarital relationships. Nonetheless, religiosity was little, if any, linked to extra-marital adventures for people who said they were happy enough or not really happy. Other studies using experimental design will attempt to establish a causal link and show that resistance to temptation, higher in believers (McCullough & Willoughby, 2009) will lead to less infidelity (Laurin, Kay, & Fitzsimons, 2012; Wolfinger & Wilcox, 2008). Religion, through the promotion of fidelity, will therefore participate in marital well-being.

---

<sup>1</sup> However, it is important to note that these numbers are probably underestimated, given the sensitivity of the information.

Another factor linked to self-regulation is the partners' ability to forgive. Forgiveness as a strategy of self-regulation has been put forward by Wilson, Chalker, Lizzio, Halford, and Kimlin (2005) in their broader conception of voluntary behaviors that individuals put in place to improve their romantic relationships. This notion of forgiveness is emphasized in religious teachings (Griswold, 2007) and is often considered central to successful marriages (Braithwaite, Selby, & Fincham, 2011; David & Stafford, 2015; Fincham, Stanley, & Beach, 2007).

Fidelity and forgiveness are central mechanisms of a healthy and happy relationship. But these realities actually contribute to marital satisfaction by playing on the management of conflicts within the couple. Pardon has been shown to make partners less likely to use negative conflict management strategies (i.e. physical assault, verbal assault) (Braithwaite et al., 2011). More generally, religiosity, and more specifically participation in religious service, has been shown to promote good conflict management leading to better marital satisfaction (Fincham & Beach, 2010; Lambert & Dollahite, 2006).

Alongside these many aspects of religion on marital satisfaction, some studies highlight certain drifts that can be deleterious to the relationship. Religion, by setting specific roles for men and women, can lead believers to act unequally (Mahoney et al., 2001) and may induce some people to relieve themselves of certain tasks or distort teachings leading to oppression of women (Dollahite & Lambert, 2007).

It is important to note that religion per se is not always sufficient to have better marital satisfaction. Indeed, in their meta-analysis on the relationship between religion and marriage, Mahoney and colleagues (2001) showed that it is participation in religious service rather than simple affiliation that benefits believers. This is in line with research that highlights the active facets of religiosity (e.g. prayer, feeling close to God) in connection with marital satisfaction (Atkins & Kessel, 2008; Dollahite & Lambert, 2007).

#### **1.4.2 Sexual satisfaction**

As seen in the previous point, religion plays a role in the development of marital satisfaction. However, marital satisfaction is also closely related to sexual satisfaction (Byers, 2005). It can be defined as an emotional response that an individual may have following an assessment of the positive and negative dimensions of their sexuality (Lawrance & Byers, 1995, pp. 268). Sexual satisfaction depends on many factors, whether they are sexual (e.g. quality of intercourse, frequency of orgasms, sexual arousal) or non-sexual (e.g. level of education, socio-economic status, religion) (see del Mar Sánchez-Fuentes et al., 2014 for a literature review). It is important to specify that, even if the frequency of sexual intercourse has long been considered essential to marital satisfaction, and still plays an important explanatory role (Schoenfeld, Loving, Pope, Huston, & Štulhofer, 2017), sexual satisfaction cannot be reduced to this determinant alone (Christopher & Kisler, 2004).

Unlike marital satisfaction, religion has more negative effects on sexual satisfaction. This is probably due to the many teachings in favor of restrictive sexuality in which individuals cannot always express their sexual urges as they want.

A first explanation could be found in conservative attitudes among believers. As seen previously, religiosity has indeed been linked to a restriction of attitudes in favor of

sexuality (Ahrold & Meston, 2010; Beckwith & Morrow, 2005; Le Gall et al., 2002), whereas an attitude of openness will contribute to sexual satisfaction (Haavio-Mannila & Kontula, 1997).

Moreover, being able to give free rein to one's sexuality is important for sexual satisfaction, but religiosity tends to limit a good number of sexual behaviors that are precisely useful for this development. Indeed, sexual satisfaction was shown to be associated with greater frequency of sexual intercourse (Frederick, Lever, Gillespie, & Garcia, 2017) and greater variability in these behaviors, such as oral sex (Frederick et al., 2017; Hackathorn, Ashdown, & Rife, 2016).

### **1.4.3 Conclusion**

First of all, it should be noted that the influences on marital and sexual satisfaction are not always very clear. Although we have presented these two concepts separately, it is important to keep in mind that marital and sexual satisfaction influence each other. Numerous studies have indeed shown the importance of sexual satisfaction for marital satisfaction (e.g. Haavio-Mannila & Kontula, 1997; Santtila et al., 2007; Yeh, Lorenz, Wickrama, Conger, & Elder, 2006). Sexual satisfaction has also been proposed as a mediating variable, for example between frequency of sexual intercourse and marital satisfaction (Schoenfeld, Loving, Pope, Huston, & Štulhofer, 2017). Some studies have also examined the extent to which being satisfied overall with one's relationship would promote sexual satisfaction (MacNeil & Byers, 2005; see also The Interpersonal Exchange Model of Sexual Satisfaction; Lawrance & Byers, 1995). The relationship between marital and sexual satisfaction therefore seems to have to be seen as bidirectional (Byers, 2005; Henderson-King & Veroff, 1994; Sprecher, 2002). However, these studies that have examined this double causality suffer from methodological biases that make it impossible to state with certainty, and some authors lean towards an explanation in terms of interindividual differences (Byers, 2005). Finally, it is interesting to note that marital and sexual satisfactions are more strongly associated at the beginning of the relationship (Byers, 1999) and that the reciprocal influences of these satisfactions would be the fact of a third variable such as communication (Byers, 2005; Litzinger & Gordon, 2005).

As already pointed out previously, even if research has highlighted a multitude of determinants of marital and sexual satisfaction, the divorce rate nonetheless remains high. However, the most frequent causes of divorce (e.g. poor communication, finance, infidelity, substance abuse, domestic violence, inadequate conflict resolution skills, low levels of love and trust; see Amato, 2010) are also variables included in most marital satisfaction scales but may ask about negative orientation (Bradbury, Fincham, & Beach, 2000; Fincham & Bradbury, 1992; Ward, Lundberg, Zabriskie, & Berrett, 2009). However, some authors suggest treating the divorce trend as a conceptually and empirically distinct indicator of relationship quality (Fowers & Olson, 1993). As a result, while inclination to divorce appears to be one of the most relevant variables for measuring marital satisfaction, it should be treated with caution. In addition, some contexts, such as the religious context, can also distort this indicator. Indeed, the role of religion in divorce might seem rather simple at first glance, with discourses along the lines of an indissoluble marriage "until death parts us", and divorce being very poorly considered (Murray, 2002). Nevertheless, divorce reach all categories of population, regardless of education, age, race, socioeconomic status, number of children or religion (Smith & Smith, 2000).

The role that religion seems to play in the satisfaction of spouses is rather paradoxical. On the one hand, it will promote a whole series of mechanisms by which individuals will be able to manage conflicts and ensure a certain stability to their relationship, while on the other hand, it will tend to restrain attitudes and behaviors that serve sexual fulfillment, which is also important to maintaining the relationship.

A major limitation that could be made to the studies carried out in this field relates to the use of self-reported measures and the processing of data per individual, not considering the potential dynamics that occur between spouses when it is a question on the one hand of religiosity and on the other hand of conjugal and sexual satisfactions.

It is nevertheless interesting to note the positive association that religion can have with certain relational aspects, when these are devoid of sexuality. This could, once again, suggest a unique and potentially conflictual relationship between religion and sexuality.

## **1.5 Explanatory mechanisms**

Religion involves a pattern of thoughts, emotions and behaviors across different contexts (Ashton, 2013) and the context of sexuality is no exception. We have already discussed the extent to which religion will involve restricted sexual attitudes and behaviors, but it is also interesting to try to understand the explanations for this limitation.

In this section, we have selected different psychological constructs that we believe can partially explain the religion-sexuality link. These constructs are declined according to various aspects of the individual, touching at the same time on affects, cognitions or certain biological predispositions, allowing, according to us, to understand this link by considering the individual as a whole.

### **1.5.1 Moral emotions**

Emotions are generally responses to a change, threat or opportunity that will prepare human beings to respond to a situation that may be critical to survival or well-being. These emotions are, in most cases, centred on the self, which is directly impacted by this event (Ekman, 1992; Plutchik, 1980; Smith & Lazarus, 1990). One of the specificities of moral emotions in particular, inherent in the social life that human beings have developed, is the fact that these emotions do not necessarily directly impact self, but that they occur in the violation of moral norms, or that motivate moral behavior (Haidt, 2003), they are therefore, in part, of the social order.

Religion, by providing many norms in relation to sexuality and by positioning itself as its moral guardian, offers a context conducive to the amplification of moral emotions. Moral emotions also generate a very good motivation to act virtuously and to avoid transgressing moral norms (Kroll & Egan, 2004). In this work, we will deal more specifically with guilt, purity and disgust.

#### **Sexual guilt**

Guilt is a self-centred emotion, that occurs when individuals are led to judge their behavior as a failure that is attributed to themselves. The purpose of this emotion is to get the individual to focus on this failure and put strategies in place to repair it (Lewis, 2000).

Applied to the specific field of sexuality, researchers speak of sexual guilt. Mosher and Cross (1971) defined sexual guilt as a generalized expectation of having to punish oneself for violating or anticipating the violation of standard sexual conduct. This guilt arises when the perception of moral, ethical or religious values becomes inconsistent with the person's behavior. Such a disposition may result in resistance to sexual temptation, inhibited sexual behaviors or specific cognitive mechanisms related to sexual situations.

Sexual guilt is one of the most studied variables in the literature dealing with religion and sexual behavior. This interest probably stems from the fact that religion implies a code of conduct related to sexuality that is expected of people who want to follow religious teachings and be virtuous to follow that code of conduct. Therefore, violating this code can lead to guilt, especially sexual guilt. Studies show that religiosity is associated with a higher level of sexual guilt ( $r = .44$ ) (see Emmers-Sommer, Allen, Kohler, & Burrell, 2017, for a meta-analysis). Specifically, religious interest and high attendance at religious services are associated with higher levels of sexual guilt, and individuals, both male and female, with these religious characteristics are also more likely to have negative attitudes about sexuality and to be less sexually active (Gunderson & McCary, 1979). In addition, these authors have highlighted the mediating effect of sexual guilt on religion/sexual behavior. This mediating effect of sexual guilt has also been highlighted more recently by Woo, Morshedian, Brotto, & Gorzalka (2012).

It is interesting to note that this sexual guilt does not only appear in people who practice sexuality outside the relational framework tolerated by religion. Indeed, Tang, Bensman, and Hatfield (2013) pointed to the fact that even people in a heterosexual marriage could perceive sexual acts (other than for the purpose of procreation) as a sin and therefore show sexual guilt.

### **Purity**

Many religious rites are dedicated to the purification of body and spirit (e.g. Lent in Christianity, Ramadan in Islam). These are not an end in themselves, but are a necessary condition for achieving other religious or spiritual goals. The notion of purity is very present in the Judeo-Christian confessions and access to purity is via prohibitions, mainly food, sexual and bodily, which vary more or less strongly according to religions. It should be noted that the notion of purity is also present in Asian religions, with a particular emphasis on sexuality (Ramsay, Pang, Shen, & Rowatt, 2014).

Viewing the entrenchment of purity in religious rites, some research has focused on this connection between religion and cleanliness. Preston and Ritter (2012) were able to demonstrate that, following religious priming, individuals generated more words related to cleanliness when completing sentences than people of neutral status. These researchers then looked at the extent to which devotion would motivate cleanliness and argued that religious priming makes cleanliness products more desirable. These studies mirror those conducted by Liljenquist, Zhong, and Galinsky (2010) and Zhong and Liljenquist (2006). They were interested in the link between purity and morality and were able to demonstrate that by inducing cleanliness through a lemony scent, individuals were more likely to be generous in a game of trust or when it was a question of making a donation to a charity. The impression of "feeling dirty" after an impure act was investigated by Lee and Schwarz (2010) and it appears from their study that people who used either the hand (writing) or the mouth

(speaking) to perform an unethical act will specifically choose a cleaning product related to this modality (i.e. hand disinfectant or toothpaste), which demonstrates a desire to clean precisely the part of the body with which a transgression was committed. These studies highlight the effect of religion on the desire for purity as well as the importance of this purity on morality, which would allow individuals to detach themselves from profane contamination and thus come closer to the sacred.

## **Disgust**

Violation of purity standards can generate another moral emotion, namely disgust (see Horberg, Oveis, Keltner, & Cohen, 2009, for a literature review). The main function of this emotion is to protect the body from ingesting toxins and contaminants (Rozin et al., 1999) by distancing it from the potentially infected object.

A number of taxonomies of disgust have been proposed, depending on the field eliciting this emotion. The most common is the one proposed by Haidt, McCauley, and Rozin (1994) which includes four categories, namely *core*, *animal-reminder*, *interpersonal*, and *socio-moral*. More recently, Olatunji and colleagues (2007) revised the scale of sensitivity to disgust and identified a new taxonomy consisting of three categories which are *core* disgust (i.e. the most primitive form of disgust that prevents any ingestion of potential contaminants whether real or perceived), *animal reminder* disgust (i.e. touches on everything that reminds us of our animal condition, such as death, sex, food, defecation, hygiene) and disgust *contamination* (i.e. refers to interpersonal disgust and the possibility of being transmitted a disease).

Having a high sensitivity to disgust can inhibit sexuality given that the different components of disgust are likely to be found in the sexual act. Indeed, having sexual intercourse implies a certain "violation" of the body envelope as well as the presence of bodily fluids, which appeals to the dimensions of animal reminder and core disgust. In addition, a third component of disgust, disgusting contamination, can be elicited by sexuality through the many sexually transmitted infections that can result. In addition to these dimensions, disgust also appears in contexts of moral judgments and some studies have linked this emotion to moral judgment (Chapman & Anderson, 2014; David & Olatunji, 2011; Eskine, Kacirik, & Prinz, 2011) or with sexual practices judged as deviant such as sodomy, incest or homosexuality (Cunningham, Forestell, & Dickter, 2013; Inbar, Pizarro, & Bloom, 2012; Inbar, Pizarro, Knobe, & Bloom, 2009). Disgust will therefore favor a more restricted sexuality (de Jong, van Overveld, & Borg, 2013). Disgust has been highlighted as a factor in condemning homosexuality (Olatunji, 2008) and has also been shown to be more present among Conservatives than Liberals (Inbar, Pizarro, & Bloom, 2009).

### **1.5.2 Interindividual, affective and cognitive predispositions**

Besides the more emotional aspects inherent in the religion-sexuality link, interindividual differences in the search for stimulation, affective predispositions or even cognitive predispositions can also have a certain weight on this link. In this section, we will discuss disinhibition, the motivations of sexual activity, sanctification or the propensity to generate sexual fantasies as mechanisms that can explain the association between religion and sexuality.

## Disinhibition

We have already addressed several times the emphasis that religion places on the capacity of self-control, and the best predisposition of believers to resist the very temptation that non-believers (McCullough & Willoughby, 2009) and we have specifically addressed its benefits in relation to fidelity. In this section, we will approach this self-control (or lack thereof) through the concept of disinhibition.

Resisting temptation indicates an individual's ability to surpass their usual desires, thoughts and patterns of behavior in order to conform to social rules. This capacity is highly valued by society (Bauer & Baumeister, 2011) and constitutes what some authors have called the "moral muscle" (i.e. the capacity for self-control, the ideal of self-control at the cognitive and emotional levels), which is at the heart of religion and morality (Baumeister & Exline, 2000). Much research has looked at the propensity of religion to encourage people to be able to control themselves. It has been suggested that implicit activation of religious concepts will decrease impulsivity (McCullough, Carter, DeWall, & Corrales, 2012) and increase various aspects of self-control, such as delaying gratification, resisting temptation, or refraining from acting impulsively (Laurin et al., 2012; Rounding, Lee, Jacobson, & Ji, 2012). Impulsivity has also been promoted as a typical predictor of various deviant or immoral behaviors (Sharma, Markon, & Clark, 2014).

However, being able to control oneself will be more or less easy depending on the need to control, impulsive needs such as thirst, hunger or even an intense sexual desire generally manifesting itself when visceral aspects are at stake. Moreover, it is important to note that sexuality is a very impulsive instinct (Loewenstein, 1996). Sexual arousal has indeed been promoted as inducing sexual disinhibition, i.e. people will be more inclined to engage in non-common, risky, even coercive sexual behavior (Imhoff & Schmidt, 2014).

Disinhibition is defined as interest in uncontrollable activities such as crazy parties, alcohol consumption or the desire for variety in sexual activity (Zuckerman, Bone, Neary, Mangelsdorff, & Brustman, 1972) and is a dimension of the broader concept of "sensation seeking". It has been shown that individuals with high disinhibition scores will have more permissive sexual attitudes about sex without commitment and will also engage in a greater variety of sexual behaviors than individuals with low disinhibition scores (Zuckerman et al., 1972; Zuckerman, Tushup, & Finner, 1976). Moreover, disinhibition is useful in order to nourish a sexual desire, or to let oneself go to thoughts or fantasies (Khurana Atika et al., 2012; Riggs et al., 2013). Alcohol and peer pressure are emphasized to facilitate sexual experiences, in part because they facilitate disinhibition (Dogan, Stockdale, Widaman, & Conger, 2010; Epstein et al., 2014).

Given the opposition between, on the one hand, the enhancement of a moral muscle and, on the other hand, the need to let go, it is interesting to take into account, when studying the link between religion and sexuality, an individual disposition that could lead the individual to one side or the other, such as disinhibition. The latter can indeed add an explanation to the variance that exists in this link, beyond dispositional tendencies such as the moral emotions that have been presented previously.

### **Motivations to engage in sexual activity**

The reasons why individuals engage in sexual activities are very varied, ranging from purely physiological reasons (e.g. excitement, reproduction) to purely emotional reasons (e.g. showing love, feeling close to the other) through instrumental reasons (e.g. getting a promotion or money, to be popular) or finally spiritual reasons (e.g. feeling close to God) (Meston & Buss, 2007).

In this thesis, we will focus mainly on two motivations, namely the search for pleasure and the search for an emotional bond with one's partner. These two motivations indeed seem relevant to us to be retained to better understand the link between religion and sexuality, religion minimizing rather the physical pleasure, being able, a contrario, to value the affective bond. We have not selected more spiritual motivations strictly speaking, because these reasons, contrary to those we will develop, are not found in the majority of individuals (Meston & Buss, 2007). Nevertheless, we will discuss the possible spiritual aspect of sexuality through the notion of sanctification later in this section.

The search for pleasure is one of the most cited reasons for engaging in sexual activity. However, it is also a motivation that contradicts religious teachings that value self-control, and sexual pleasure is something that a good (Christian) believer should abstain from (Bullough, 2003). However, no study seems to be specifically interested in this variable as being able to play an explanatory role in the religion-sexuality link. Nonetheless, many studies highlight a negative link between the value of Hedonism (i.e. pleasure and personal gratification of the senses (Schwartz, 1994)) and the values conveyed by religion, such as Tradition, Conformity and Benevolence (Roccas, 2005; Saroglou, Delpierre, & Dernelle, 2004). Still according to Schwartz's (1994) value model, Hedonism (the value of sexuality for pleasure) stands at the intersection of the "Openness to change" and "Self-Enhancement" axes, respectively at the other extreme of "Conservation" and "Self-Transcendence" (values of religion). In this sense, the devaluation of hedonism could explain religion's critical view of sexuality. Finally, the search for pleasure in the sexual act was shown to be positively associated with a socio-sexual orientation (Meston & Buss, 2007), an orientation we saw as being in conflict, at least partially, with religiosity in the sections dealing with sexual attitudes and behaviors.

Engaging in sexual relations in order to feel close to your partner, to express your love or to intensify your relationship is just as common as the motivation to search for pleasure. However, unlike the latter, we believe that having sex in order to strengthen relationships with one's partner may not be in contradiction with religious norms and values. Indeed, given the importance of sexuality in building emotional relationships between partners (Hazan & Zeifman, 1994), accepting sexual relationships within the couple would facilitate the long-term maintenance of relationships (Lehmiller, 2014), which would be in line with religion's emphasis on family values (Mahoney et al., 2001). Moreover, contrary to the negative association found between pleasure-seeking sexual activity and socio-sexual orientation, Meston and Buss (2007) found no link between the latter variable and the search for love and commitment.

### **Sanctification**

Alongside these very popular motivations for engaging in sexuality, a number of studies have proposed the notion of sanctification, which could be seen as a spiritual dimension, as interesting to investigate in the religion/sexuality link.

Sanctification can be defined as the attribution of sanctity or spiritual meaning to one or more aspects of life, which can also apply to sexuality (Murray-Swank et al., 2005). This sanctification theory is thus opposed to the theories that the researchers call dualist, theories mainly used in the study of the religion-sexuality link, which envisage sexuality as being dissociated from religion, and even in conflict.

Sanctification has been studied in both married and unmarried couples. Murray-Swank and colleagues (2005) looked at non-married couples, and found that for those couples, considering their relationship as having sacred characteristics is related to more sexual activity with their partner. This may be related to previous studies that have emphasized that men and women often legitimize their non-marital sexual relationships by placing them in a relational context involving love and commitment (DeLamater & MacCorquodale, 1979; Roche, 1986; Westera & Bennett, 1994; Wilson & Medora, 1990).

In the context of married couples, sanctification has been shown to be a predictor of greater marital satisfaction, greater sexual intimacy and conflict prevention (Ellison, Henderson, Glenn, & Harkrider, 2011; Hernandez, Mahoney, & Pargament, 2011). As seen in the section on marital satisfaction, this may be due to a greater propensity to forgive or be faithful among those who sanctify their relationship (Dollahite & Lambert, 2007; Stafford, David, & McPherson, 2014). Nevertheless, contrary to what has been shown for unmarried couples, sanctification has not been shown to be linked to a higher frequency of sexual intercourse among newlyweds (Hernandez et al., 2011).

### **Sexual fantasy**

Sexual fantasies are cognitions used to induce sexual desire, maintain a certain level of excitement, spice up sexual experiences or help achieve orgasm (Leitenberg & Henning, 1995). However, although universally shared, not all people react in the same way to these thoughts and they can become a source of shame and guilt (Ellison, 2011). According to Masters and Johnson (1970), religious fundamentalism strongly fuels negative attitudes toward sexual fantasies.

The way in which religion can act on sexual fantasies has interested some researchers. Gil (1990), for example, found that individuals' assessment of their fantasies, combined with their religious norms, strongly correlates with fantasy-related guilt. Other studies have also found a negative link between religiosity and sexual fantasies. Ahrold, Farmer, Trapnell, and Meston (2011), for example, have emphasized intrinsic orientation as a predictor of a restriction of sexual fantasies. Interestingly, Nicholas (2004) has shown that people with a higher level of religiosity will show more pleasure in fantasies involving vaginal sex than oral sex. This is consistent with the acceptance of a certain sexuality, focused on reproduction and therefore involving vaginal intercourse.

### **1.5.3 Conclusion**

Here we have proposed different mechanisms that can clarify the tension between religion and sexuality. Although non-exhaustive, these mechanisms seem central to us, affecting different aspects of the individual when faced with a given situation, whether it is a sexual stimulus or respect for norms or values from a reference group (in this case, religion). This holistic consideration of the individual highlights the complexity of the relationship between religion and sexuality as well as the inter- and intra-individual influences at stake.

Among the variables that have been presented as (partly) explaining the link between religion and sexuality, some, such as guilt and sanctification have already been proposed as explanatory factors, while others, such as disinhibition, motivation or disgust have never yet been linked to both religion and sexuality.

## **1.6 Sexuality from a cross-religious point of view**

When the question of the psychological influences of religion is addressed, a spontaneous but complicated question emerges, that is : Are there differences between religions? Answering this question is complex for a number of reasons. First of all, it can be difficult to identify all religions, because of the multiplicity that exists. Second, and related to the first reason, dealing with all religions and being able to make a comparative study of them is almost impossible, not only because of their numbers, but also because of the different ways in which individuals practice their religion. Finally, having access to all populations practicing different religions is very expensive. Therefore, studies that attempt a cross-religious approach are generally based on some of these, generally the most widespread religions in the populations accessible to researchers. Nevertheless, taking individuals of Christian, Muslim, Hindu, Buddhist and Jewish denominations (listed here in order of size of membership), about 77% of the population is represented. To this can also be added 16% of non-affiliated people (data from the Pew Research Center, 2015) and studying the effects of religion by limiting oneself to these people already makes it possible to understand what is at stake for a large number of individuals.

Another question that arises when studying different religions is the overlap between religion and culture. As cross-cultural study is not at the heart of this thesis, we will only deal with this question in a rather succinct way, nevertheless laying the foundations can be interesting to advance gradually on the question of differences/similarities between various religions and sexuality. Indeed, in a study of more than 50 psychological variables conducted across 33 countries, it was shown that the greatest cultural differences are found in the impact of religion on behaviors related to beliefs and norms (Saucier et al., 2015). Saroglou (2018) suggests that this influence on morality will be translated through different behaviors such as homosexuality, heterosexuality, marriage and child rearing, the economic environment and the world of work, prosociality or citizenship.

### **1.6.1 Views of different religions**

Most of the world's major religions have in common that they see sexuality as something that can only take place within marriage. Therefore, premarital relationships are considered a transgression, and chastity is required. For example, in Islam, virginity is seen

as the assurance that the person is not attached to a previous lover, and can become fully involved in the marriage (Dialmy, 2010). Chastity, although required of women and men, is mainly (and culturally) applied to women (Chebel, 2012). This greater pressure on female virginity is found in most religions.

However, the Catholic religion seems stricter in the sense that the condition of procreation is absolute and that control of sexual urges is demonstrated through abstinence and celibacy (Abbott, 2003; Denison, 1998). On this last point, it is interesting to note that religions do not converge. Celibacy is the culmination of ascetic life in the Catholic, Buddhist and Hindu religions. For example, in the case of Buddhism, this enhancement of celibacy will open the doors of nirvana and free women from the burden of marriage and motherhood. These women (nuns) who are going to make an act of celibacy will also be able to access positions generally reserved for men (Abbott, 2003). On the other hand, celibacy is forbidden in Judaism, because it goes against the commandment "Be fruitful, multiply, fill the earth" (Genesis 1:28), as well as in Islam and Protestantism.

Another notion that divides religions is that of pleasure in the sexual act. If in the Catholic religion the place of pleasure in the sexual act is ambiguous (Gagnon, 1990), to take pleasure in the sexual relations is recommended in Judaism,<sup>2</sup> because it is indeed by taking pleasure that the couples will be able to engender a healthy child (Abbott, 2003). This notion of pleasure is also central in Islam. Indeed, the term "nikâh" (= marriage) gathers both the concepts of marriage and coitus and, therefore, marriage must include coitus, pleasure and pleasure sharing between spouses (Chebel, 2012; Dialmy, 2010). In order to seek this pleasure, in Islam, various behaviors are encouraged, such as kissing, foreplay and vaginal penetration (Gutiérrez, 2012). However, it should be noted that in any sexual act, the man must remain dominant and therefore certain sexual practices, such as the "amazon" (i.e. the woman above) or the "doggy style" (i.e. the man stands behind) are prohibited (Dialmy, 2010).

However, the different religions agree on the issue of purity and sexual relations. Indeed, in Islam, Judaism, or even Hinduism, intercourse is proscribed at the time of menstruation and purification is necessary after a sexual act (Bellakhdar, 2009). In the Catholic religion, sexual relations are permitted during menstruation and represent the only case (with menopause) in which sexuality without reproduction is permitted (*Humanae vitae*; Catholic Church & Paul VI, 1968). However, the idea that the woman is soiled during menstruation remains quite present (Ballarin, Euler, Le Feuvre, & Raevaara, n.d.), and this has been one of the reasons for the exclusion of the woman from the positions of Christian religious authorities (Phipps, 1980). All religions consider women unfit for religious rituals during this period (Bhartiya, 2013), but the rules that apply vary widely, with some religions even prohibiting women from any family activity (e.g. Chhaupadi practiced in Nepalese Hinduism).

---

<sup>2</sup> It is important to note, however, that some ultra-Orthodox Jewish communities will tend to develop a more puritan vision of sexuality, which is therefore closer to the Catholic conception where sexual relations are only for procreation. Moreover, individuals of the ultra-orthodox faith will reject the notion of pleasure in the sexual act and reduce the woman to an object of procreation.

Another theme that regularly appears in religious texts is the practice of masturbation. At the heart of this question is generally the fact that semen cannot be wasted. In Hinduism, for example, semen is considered to be a guarantee of health and moral and spiritual development (Abbott, 2003) and, therefore, must be preserved. Beyond masturbation, and for the same reasons of semen loss, certain contraceptive methods are also condemned, as are nocturnal pollution (but given the fact that these are inevitable, they will be less condemned. However, purification will be necessary when this happens).

Finally, a final issue that deserves attention when it comes to sexuality and religion is homosexuality. This practice is perhaps the most condemned by Abrahamic religions, which include the statement "*You shall not sleep with a man as you sleep with a woman. It's an abomination.*" (Leviticus 18:22) in the Torah or in the Koran [26:165-166] "*Do you perform the fleshly act with the males of this world? And do ye forsake the wives whom your Lord has created for you? But you're just transgressors. If you don't stop, Lot, you will certainly be among those expelled. I really hate what you do*". The position of Asian religions is a little less clear. Indeed, in Buddhism, even if there is a great valorization of heterosexual sexuality with a view to procreation, there is no text that specifically sanctions homosexuality. Similarly, in Hinduism there is even a certain virtue to homosexual relations (Biardeau, 2009; Daniélou & Gabin, 2005). However, the influences of Muslim countries and then of the British colony tainted this acceptance, with "unnatural offences" even found in the Indian Penal Code (India, 1863)<sup>3</sup>.

### **1.6.2 Empirical studies**

Although there are some variations between religions, the previous section nevertheless highlights many similarities in the approach to sexuality by different religions. This is in line with what has already been discussed several times, that is studies have shown that certain attitudes and behaviors are stable across different cultures (Schmitt, 2003, 2005; Schmitt & Fuller, 2015). However, even within these cultures, differences may emerge due to the various religious denominations that coexist. In the following two sections, we will discuss studies that have attempted to approach possible religious differences in sexual attitudes and behaviors.

#### **Sexual attitudes**

Compared to other religions, Islam would be likely to generate more conservative overall sexual attitudes than other religions (Adamczyk & Pitt, 2009; Finke & Adamczyk, 2008). Still with regard to sexual attitudes in general, researchers have found that Jews tend to have more liberal attitudes than Christians (Leiblum, Wiegel, & Brickle, 2003; Regnerus & Uecker, 2007).

Regarding attitudes about premarital relationships, Muslims, as well as Hindus, are more conservative (Adamczyk & Hayes, 2012). de Visser and colleagues (2007), as for them, found no differences in attitudes about premarital relationships between Catholic, Protestant, Muslim and Buddhist affiliations.

---

<sup>3</sup> Note that homosexuality has been decriminalized in September 2018, yet it will take time for homosexuals to be accepted

As with attitudes about premarital relationships, Muslims and Hindus are less supportive of extra-marital relationships (Adamczyk & Hayes, 2012). Another study adds that Jews and Protestants are against extramarital relationships, the latter reporting greater conservatism (Cohen & Rozin, 2001). According to these authors, this is explained by the fact that thoughts have a different moral status. Indeed, in Judaism, acts and thoughts are not morally equivalent, whereas this distinction is not found in Protestantism.

The effect of religiosity on negative attitudes toward homosexuality is found across many cultures (Saroglou, 2018; Whitley, 2009). A study using data from World Values Surveys (Inglehart, 2004) showed that Muslims, Protestants, Hindus, Buddhists and Orthodox Christians condemn homosexuality more than non-believers, Catholics and Jews (Adamczyk & Pitt, 2009). However, these researchers qualify these results by adding a variable to control for the dominant religion of the country of individuals and then identify only Protestants as having attitudes as conservative as Muslims. Experimental studies confirm the link between religiosity and prejudice towards homosexuals and add a causal dimension to this effect, with religion having a negative impact on attitudes and behavior towards homosexuals in a Christian (LaBouff, Rowatt, Johnson, & Finkle, 2012), Muslim (Yilmaz, Karadöller, & Sofuoglu, 2016) or Buddhist (Ramsay et al., 2014) population. However, a study shows that Belgian and French Buddhists (thus in a context of conversion) will be more favorable to homosexuality when they are subjected to a Buddhist priming rather than neutral (Clobert, Saroglou, & Hwang, 2015).

### **Sexual behaviors**

There are few studies dealing with differences in behavior, and the practices studied are limited and focus mainly on socio-sexuality. Also, some very interesting research approaches these variables from a cross-cultural perspective, but does not focus specifically on religious denominations (Schmitt, 2003, 2005; Schmitt & Fuller, 2015).

Data reported by Adamczyk & Hayes (2012) highlight that Muslims and Hindus are less likely to report premarital sex than Christians or Jews, and that Buddhists report more premarital sex than Muslims, Hindus or Christians. These results echo those found by de Visser et al. (2007) who argue that non-believing men and Buddhists have more premarital sex than Catholics, Protestants and Muslims. It is also interesting to note that in the same study, women of a religious faith (Catholic, Protestant, Muslim or Buddhist) reported fewer premarital relationships than non-believers. Also, in two other studies, Muslims were again pointed out as having fewer relationships outside marriage than Christians (Addai, 2000; Agha, 2009).

Muslims and Buddhists report fewer extra-marital relationships than Christians or Jews (Adamczyk & Hayes, 2012). de Visser et al. (2007) which indicates that only Buddhist men report more monogamy, compared to non-believers, Muslims, Catholics and Protestants, while women report the same level of relationships outside marriage, regardless of their affiliation.

### **1.6.3 Conclusion**

Although small differences between religions may emerge, the majority of studies support the idea of a negative link between religion and sexuality across major religions. Moreover, these differences are not so much a radical change in the direction of this link,

but rather a difference in its intensity. This is in line with what is indicated Saroglou (2018) by highlighting the fact that religiosity influences the moral preferences and behavior of individuals in a fairly similar way, across major religions and cultures.

It is also interesting to note that some studies will highlight differences between affiliations. However, it is important to keep in mind that authors often report low participation rate of people of different faiths from the general confession of the country in which the study takes place (de Visser et al., 2007; Leiblum et al., 2003) and therefore caution in generalizing the results. Moreover, as de Visser and colleagues (2007) point out, the inconsistent results concerning Buddhists can be explained by the fact that there are really no strict texts or rules concerning the behavior to adopt.

Nevertheless, even if the influences of religion on sexual behavior and attitudes appear to be the same across different religions, it is still interesting to continue further studies and explore whether differences in intensity may have different implications on sexuality (e.g. differences in attitudes, behaviors, marital and sexual satisfaction) or whether explanatory mechanisms might ultimately vary from one religion to another.

## **2. Limitations of existing literature and research questions**

In previous sections, we have highlighted the studies that have been done so far and have tried to explain the link between religion and sexuality in different ways. The first part concerned the link between religion and sexual attitudes, the second the link between religion and sexual behaviors. In the third part, we looked at the particularities of spirituality in the first two components of sexuality that had been developed. In the following section, we examined the place of religion in the life of a couple, and more specifically on marital and sexual satisfactions, before focusing, in the fourth section, on the explanatory mechanisms that can explain this link between religion and sexuality. Finally, our interest focused on the differences and similarities that can appear between different religions.

At the end of this theoretical chapter, a number of limitations and questions emerged. The empirical part of this thesis will therefore attempt to answer some of them. In this section, we will focus on these limitations and questions and explain how we plan to circumvent and/or respond to them.

### **2.1 Cultural contexts and populations studied**

A first limitation of the existing literature concerns the cultural context in which most research takes place, an important context to take into account when apprehending the results. In this section, we will discuss the limitations of research on religion-sexuality by addressing three main limitations inherent in the context in which it is conducted. First, we will discuss the fact that most of these studies are conducted in the United States. Then, we will briefly develop how samples of existing studies can pose problems of generalization before finishing by limiting the research to Christian populations.

#### **2.1.1 *Religious vs. secular context***

Most of the studies that have examined the relationship between sexuality and religion have been conducted in the United States, in a context where religious norms and values are emphasized. Indeed, approximately 77% of Americans declare themselves believers (Pew Research Center, 2015), and religion is very present in the public space, Americans finding, for example, very important that the President has a strong religious conviction (Pew Research Center, 2016).

This contrasts with what can be found in secularized countries, where religion has very little place in the public domain. In Belgium, for example, less than 50% of people call themselves Catholics and less than 5% go to religious services (Havermans & Hooghe, 2011). However, these secularized countries are rooted in a religious heritage that may still influence people's daily lives and predict cultural differences (Georgas, van de Vijver, & Berry, 2004; Vignoles et al., 2016).

It is therefore interesting to extend research on the link between religion and sexuality to a secular context in order to see to what extent the country's religious tradition could influence various aspects of sexuality. This question is all the more interesting because it is part of a line of research interested in the differences in the effects of religion between secular and religious contexts. One might assume that in secular countries where

there is an appreciation of free expression and self-affirmation, the link between religion and sexuality would be less prominent, if not non-existent. However, previous studies have shown a stronger negative link between religiosity and various aspects of sexuality, such as tolerance towards homosexuals (Adamczyk & Pitt, 2009; Donaldson, Handren, & Lac, 2017; Hoffarth, Hodson, & Molnar, 2017), premarital sexual relations (Jung, 2016) or socio-sexuality (Schmitt & Fuller, 2015) precisely in these societies valuing free expression. It is therefore of interest to see whether these results apply to other areas of sexuality, or are limited to behaviors that reflect the most liberated aspect of sexuality. This specific point will be developed throughout the empirical part of this thesis, the studies presented being based on samples mainly from Belgium and France.

### **2.1.2 Population type**

Much existing research has focused on the religion-sexuality link in order to highlight the protective effects of religion on the occurrence of first sexual intercourse among adolescents. However, it is equally interesting to examine the extent to which religion continues to influence various aspects of sexuality once the person is sexually active. We have indeed seen in the theoretical part of this thesis the link between religious ideas, norms and practices and various sexual attitudes and behaviors. Nevertheless, this research is based mainly on (very) young adults participating as part of their university studies. Both religion and sexuality are realities that evolve over time (Argue, Johnson, & White, 1999; Le Gall et al., 2002), and the link between the two has already been shown to be sensitive to cohort effects (Twenge et al., 2015). Moreover, older people with a less permissive and instrumentalized view of sexuality (Le Gall et al., 2002), we might expect stronger results in this population. However, this point needs to be qualified with regard to certain aspects. Indeed, older people are also more likely to have a sexuality more in line with religious norms (in marriage). Finally, it is also interesting to note that older people have a lower diversity of sexual behaviors and a lower prevalence (Herbenick et al., 2010). Continuing to investigate the link between religion and sexuality in a sexually active adult population therefore seems necessary in order to understand how these realities influence each other. This aspect, like the secular context, will be addressed throughout the empirical chapters of this work.

### **2.1.3 Differences/similarities between religions**

The approach of different religions to sexuality has been presented in the theoretical part of this thesis. As we have pointed out, there are more similarities than differences. However, it is difficult to form a definite conclusion given the few studies that are interested in exploring this link from a cross-religious/cross-cultural point of view. In addition, the exploration of the psychological mechanisms underlying this relationship has never been put in place from a cross-religious point of view, but this question does allow us to progress the understanding of the link between religion and sexuality. Given what has been advanced in the theoretical part we expect similarities between Abrahamic religions. Indeed, they share a very similar view of what is right and wrong to do about sexuality. An exception could, however, as we will argue later in this section, concern aspects of pleasure seeking.

In Chapter 2, we will present a study using samples from a Catholic and Muslim population to test the extent to which the link between religion and sexuality in these populations and the proposed explanatory mechanisms behave.

## 2.2 Explanatory mechanisms

A second set of limitations inherent in much of the existing research on the relationship between religion and sexuality is that studies generally fail to approach the explanatory mechanisms associated with this relationship. However, the section relating to the explanatory mechanisms of this thesis showed us the interest of examining the question. Indeed, these mechanisms can significantly influence this link, certain moral emotions or a disposition towards disinhibition or access to fantasies that can play an inhibiting role, while aspects such as sanctification can help, on the contrary, to reconcile religion and sexuality.

In the empirical part of this thesis, we will approach, through different studies, the mechanisms that can be at work. In the theoretical introduction, we proposed possible mechanisms affecting various spheres of the individual, such as the emotional domain or the cognitive domain, which may have an influence on the religion-sexuality link. More specifically, we will address the variables of sexual guilt, disgust and fantasy in Chapter 2. Disinhibition will be addressed in chapters 2 and 5, and pleasure seeking in chapters 2 and 4.

In contrast to the literature presented in the theoretical introduction, we will not consider the possible effects of sanctification for several reasons. First, as indicated by Meston and Buss (2007) very few people report spiritual reasons for engaging in sexual activities. Moreover, studies that have focused on sanctification have been based on a population with a very high level of religiosity, or from university campuses with a very traditional orientation. Since our studies take place in a secularized society, proposing variables such as sanctification does not seem very relevant. Indeed, the level of religiosity in Belgium is quite low (on average between 2 and 3 on a 7-point Likert scale (see empirical chapters)) and it is therefore unlikely that this population is sensitive to a variable such as sanctification. Moreover, as Saroglou (2014) indicates, proposing very religious measures (such as a multi-item measure of sanctification of marriage or relationship) to a population with average religiosity can create problems for the conduct of a study such as boredom or annoyance among participants.

To our knowledge, no study has attempted to understand the link between religion and sexuality by simultaneously integrating different explanatory psychological mechanisms. We believe that this point is nevertheless very important in order to really grasp the influences that religion and sexuality have on each other, it seems essential to us not to limit ourselves to the isolated study of this or that mechanism. In this context, Chapter 2 of this thesis will propose a correlational study integrating at the same time the different mechanisms proposed above in order to verify their predictive capacity as well as their respective weights in the religion-sexuality link.

## **2.3 Methodological aspects**

A third important limitation in the literature presented in the theoretical part of this thesis concerns the measures used and the almost exclusively correlational and cross-sectional nature of the studies. Indeed, the vast majority of studies use self-reported measures and treat them individually which, despite the undeniable advantages, can also miss some useful mechanisms for understanding the religion-sexuality link.

### **2.3.1 Studying the religion-sexuality link**

The most widely used method for studying the relationship between religion and sexuality is the use of surveys. The popularity of this method is due to the ease of implementation, the low cost involved and the large number of potential participants. However, many limitations are applicable to surveys focusing on religion and sexuality, such as participant self-selection, social desirability or item comprehension (Lehmiller, 2014; Saroglou, 2014). Moreover, this method does not allow the causal link between two variables to be investigated.

Another method that can be considered to address this causality limit is the experimental method. This will be developed in more detail below, in the section dealing with the causal direction.

It therefore seems important to us to vary the data collection methods and this work will approach the question of the link between religion and sexuality by including both correlational methods (surveys; see chapters 2 and 3) and experimental methods (see chapters 5 and 4).

### **2.3.2 Self-reported measures**

Most surveys are used with questionnaires measuring concepts in a self-reported way. Although, as discussed in the previous point, this approach has several advantages, relying only on self-reported measures to understand a phenomenon that can potentially be sensitive to dynamics between individuals can be problematic. This is mainly the case for understanding the link between religion and marital and sexual satisfaction, given the dependence that exists between partners (Cheung et al., 2008; Szinovacz, 1983; Szinovacz & Egley, 1995).

One way to understand the dynamics that exist within the couple is to study the link between religion and sexuality in a dyadic way. This approach makes it possible to analyse how the variables of the partners influence each other. This approach will be used in Chapter 3, which will examine the links between each partner's religiosity and marital and sexual satisfaction, as well as the link between each couple's religiosity and the different components of love as conceptualized by (Sternberg, 1997), namely intimacy, love and commitment.

Beyond the interdependence that exists between the partners, another method that can be interesting to set up in the study of the religion-sexuality link is the evaluation made by the partner. This hetero-evaluation has often been implemented in studies concerning personality, with the idea that, even if a person remains a relevant judge for himself, an "external" evaluation can also be informative and give access to new information. Indeed,

as indicated by Vazire and Carlson (2011), some facets may escape self-evaluation (for example to maintain and develop self-esteem; Sedikides & Gregg, 2008), and an evaluation by an external person, who knows the person and the field well, can identify these facets. It is important to note, however, that proximity between the person being assessed and the assessor is an important factor to take into account, knowledge of the other being better over time (Biesanz, West, & Millevoi, 2007). In our opinion, the link between religiosity and marital and sexual satisfaction of partners can also be approached via a hetero-evaluation. In fact, being able to have information not only on the person's feelings, but also on the partner's impression of both marital and sexual satisfaction, as well as being able to compare whether or not there is congruence between the partners are all questions that have received little attention in the literature, but which would make it possible to gradually advance research on understanding the phenomenon.

## 2.4 Causal direction

Given what was developed in the previous section, the methods used by existing studies, mostly surveys, do not allow us to approach the question of causality between religion and sexuality. However, to really understand the phenomenon that interests us in this thesis, the question of causality is essential.

To address the question of the causal link between religion and sexuality, one way is through experimental designs. Even if certain limitations are inherent in the use of such designs (e.g. artificial environment, selection of variables, manipulation of certain variables impossible or unethical), this approach has important advantages such as the control of other potentially influencing variables, the possibility of replication, but especially the possibility of verifying the existence of causal relationships (Chivers, Suschinsky, Timmers, & Bossio, 2014; Kirk, 1982; Lehmiller, 2014; Saroglou, 2014). The experimental approach has been used very little in studies dealing with religion-sexuality (see for exception: Fincham, Lambert, & Beach, 2010; Li, Cohen, Weeden, & Kenrick, 2010).

In the theoretical part of this work, and like the vast majority of studies, we have focused mainly on the religion-sexuality link, assuming the unidirectional link with religion as an input variable. It is interesting to note, however, that while studies assume the direction of this link, very few question it. This is probably due to the fact that this causality is most intuitive in view of early socialization to sexuality and the role that religion holds within family education (Lambert & Dollahite, 2010; Thornton & Camburn, 1987).

Two longitudinal studies were directly concerned with exploring the causality between religion and first sexual intercourse among adolescents. It shows that religiosity negatively predicts the occurrence of first sexual intercourse while the reverse relationship could not be shown (Hardy & Raffaelli, 2003; Meier, 2003). However, even if these authors do not observe a change in religiosity, they note a change in sexual attitudes following entry into sexuality, especially among women, which would suggest that sexuality would be able to change the frame of reference of individuals.

Although these two studies suggest a unidirectional causal link, it may be possible that under certain conditions, sexuality in turn may impact religion. This assumption is based on various studies that may provide indirect evidence. First, Li, Cohen, Weeden, and Kenrick (2010) have shown that in a partner search context in which individuals compete,

religiosity can vary and serve adaptive functions. Moreover, sexual disinhibition has been found to predict religious doubt and apostasy (Saroglou, 2012). Finally, changes in personality traits according to life stages will affect the level of religiosity (see Saroglou, 2012 for a review of the literature).

In the empirical part of this thesis, the question of the causality of the religion-sexuality link will be addressed in two chapters using experimental designs. In Chapter 4, we will explore the extent to which religious initiation can shape the memory of a sexual experience. While in Chapter 5, the reverse causal direction will be addressed through three studies highlighting the effects of a recall of a sexual experience on religious attractiveness and on moral behaviors.

### **3. Organization of the empirical chapters**

The empirical part of this thesis will deal with the question of the link between religion and sexuality in four separate chapters. These chapters will be organized in two main parts. The first will be correlational and will attempt to highlight 1) the mechanisms that can explain the religion-sexuality link 2) the extent to which these mechanisms extend to another population (i.e. Muslim) than Christian (which is most often investigated) (Chapter 2) and 3) whether the results presented in the theoretical part are due, among other things, to self-report measures or whether the religion-sexuality conflict is validated through hetero-evaluations or dyadic analyses (Chapter 3).

The second part will look at the direction of the religion-sexuality link. Through two experimental studies, we will see the extent to which religion inhibits, or at least transforms, the relationship to sexuality (Chapter 4). The reverse causality from sexuality to religion will be addressed through three experimental studies (Chapter 5).

## **Empirical Chapters – PART I**

---

In this first empirical part, we will look more deeply into the link between religion and sexuality than is usually considered. Indeed, this part will aim to highlight the fact that the relationship between these two realities is more complex than what is usually admitted, by demonstrating the importance of considering psychological mechanisms. More specifically, in the first study in Chapter 2, we will see the role played by sexual guilt and disgust/purity, two moral emotions previously shown to be inherent in religious personality. The role of disinhibition, an interindividual difference that goes against the requirements of the religion of self-control, as well as sexual fantasies and the search for pleasure will also be investigated.

A second major question at the heart of this first empirical part is the extent to which religion-sexuality conflict can take on. To do this, we assessed the extent to which the mechanisms put forward in the first study in Chapter 2 can also be found in a population with a religious background other than that usually considered. We therefore examined these same mechanisms in the light of Islam, another monotheistic religion, having a very large number of affiliates, and having a very strong opinion on sexuality.

Still linked to this question of the extent of the conflict between religion and sexuality, we also wanted to see to what extent it could be reflected in the relationship between the partners. To do this, we interviewed couples and were interested in partners' levels of marital and sexual satisfaction (see Chapter 3). In addition to assessing the impact of religion on the couple, this study also allows us to verify whether self-reported measures of satisfaction suffer from significant biases, or whether they are, on the contrary, validated by both members of the couple. This would highlight that religion-sexuality conflict is not limited to the purely intra-individual sphere but can also be seen as an experience shared by the partners or at least to the perception of their relational functioning.



## Chapter 2

### **Religiosity and sexual behavior: Tense relationships and underlying affects and cognitions in Christian and Muslim samples**

---

Reference:

Rigo, C., & Saroglou, V. (2018). *Religiosity and sexual behavior in Christians and Muslims: Tension and underlying affects and cognitions*. Manuscript submitted for publication.



## **1. Abstract**

Religion's historical mistrust of sexuality shapes people's behavior, by inhibiting liberal sexuality. Still, it is unclear whether this inhibitive effect also includes common, normative sexual behavior, in particular in secularized contexts. Moreover, relevant emotions, affects, and thoughts as possible mediators of the religiosity-restricted sexuality link have not yet been integrated into a single model to be tested. Finally, cross-religious differences on common sexual behavior are still to be documented. We addressed these three issues in two studies, with samples of Catholic and Muslim tradition (total  $N = 446$ ). Consistently across samples, religiosity predicted, either directly or indirectly, less frequent common heterosexual behaviors and masturbation, partly through sexual guilt and inhibition, and/or decreased sexual fantasy and the search for sexual pleasure. However, married Muslims' religiosity, unlike Catholics', did not directly undermine fertility-oriented sexuality and the search for pleasure. Religion's role in restricting sexuality seems to be rooted in deep psychological reasons.



## **2. Introduction**

The major world religions have traditionally been suspicious of sexuality, or at least of some aspects of it, and have established norms aiming to regulate and restrict sexuality (Hunt & Yip, 2012; Thatcher, 2014). Is this suspicion part of a historical past or does it translate into contemporary religious peoples' sexual lives, in particular in modern secularized contexts? There has been substantial psychological research having investigated the religion-sexuality relationships (see below). The present study aims to advance our knowledge on this domain in three ways. First, it focuses on common, conventional, and normative heterosexual behavior and masturbation, and not on attitudes toward liberal and permissive sexuality such as extramarital and marital sex and homosexuality. Moreover, it integrates into a set various cognitive and affective constructs and test their possible role in mediating and explaining the relationships between religiosity and (restricted) sexual behavior. Finally, it examines similarities and differences on the religiosity-sexual behavior relationships between participants of Christian and participants of Muslim tradition. Below we review the relevant research, develop the rationale of the present work, and formulate our expectations.

### **2.1 Religiosity and (Restricted) Sexuality**

Evidence from studies on single groups, or more than one group within the same country, shows that religious people tend to report low sexual interest and search less for sexual opportunities, experience their first sexual intercourse at a later age, have fewer premarital or extramarital relationships, engage in fewer unconventional sexual behaviors (same-sex relations, multiple partners sex, oral and anal sex), but also fewer sexual behaviors that are widely considered as conventional, natural, and appropriate, such as masturbation, and foreplay and vaginal intercourse within heterosexual marriage (e.g. (Baćak & Štulhofer, 2011; Stulhofer, Soh, Jelaska, Bacak, & Landripet, 2011; de Visser, et al., 2009; Farmer et al., 2009; Hull, Hennessy, Bleakley, Fishbein, & Jordan, 2011; Regnerus, 2007; see also, for reviews: Hernandez, Mahoney, & Pargament, 2013; Li & Cohen, 2014). However, most of that research has been carried out in one country, i.e. the US, whereas studies in secular contexts as Europe have primarily focused on how religiosity relates to unconventional liberal sexual behavior (e.g., homosexuality or multiple partners), typically considered as immoral within religion. Thus, it has not been clearly empirically established that, even in very secular contexts, religiosity should be negatively related to common, conventional, and normative sexual behavior, limited to heterosexual couples, i.e. sexual behavior not clearly qualified as immoral within religion.

Similarly, evidence from large international studies suggests that the relationship between religiosity and restrictive socio-sexuality is present across religions, countries, and major world regions, though there may be differences in the strength of the effects as a function of characteristics at the individual and societal level (e.g., Adamczyk & Hayes, 2012 ; Hoffarth et al., 2017; Jung, 2016; Schmitt & Fuller, 2015; see Saroglou, 2018, for review). Nevertheless, these data typically focus on indicators of a strong moral divide between conservatives and liberals (attitudes toward homosexuality, premarital and extramarital sex, number of partners) or use a too global index of sexual attitudes. Thus, they do not provide specific information on the more common and conventional sexual

behavior that is broadly present in heterosexual couples' and individuals' life, such as sexual intercourse, kissing, foreplay, oral sex, and masturbation.

Of importance to note that the above large evidence attesting a negative association between religiosity and (permissive) sexual attitudes and behavior applies to measures of personal, general, religiosity and indicators of various aspects and forms of religious beliefs, practices, and attitudes. This negative association weakens or becomes nonexistent when it comes to: (1) the religion-as-quest orientation (e.g. Rowatt & Schmitt, 2003), which heavily denotes religious doubt; (2) spirituality (Brelsford et al., 2011; Woo et al., 2012), which denotes attachment to the sacred independently from religious institutions; and (3) the specific orientation called sanctification of sexuality in marital/loving relationships, i.e. seeing a sexual union as sacred and encouraged by God (Hernandez, Mahoney, & Pargament, 2014), which by definition means positive attitudes toward sexuality.

Beyond cross-sectional studies based on self-reports, longitudinal and experimental studies further confirm the religion- sexuality contrast, and do so in both causal directions. Longitudinal evidence (see earlier reviews: Rostosky, Wilcox, Wright, & Randall, 2004; Zimmer-Gembeck & Helfand, 2008) shows that religious factors predict later restricted socio-sexuality (Hull et al., 2011; Pedersen, 2014) and a decrease of religiosity predicts a later increase of sexual behavior (Aalsma et al., 2013), whereas inversely sexual experience predicts a later decrease of religious/spiritual interests (Grubbs, Exline, Pargament, Volk, & Lindberg, 2017; Vasilenko & Lefkowitz, 2014). Similarly, supraliminal religious priming pushes Belgian adults to more negatively evaluate erotic--simply sensual and semi-nude pictures and dedicate less time to looking at them (Rigo & Saroglou, 2013). Inversely, immersion in a sexual mindset, through remembering one's own personal sexual experience, makes Western Europeans lower their spiritual interests and moral behavioral tendencies (Rigo, Uzarevic, & Saroglou, 2016).

Following the above substantial cross-sectional, longitudinal, and experimental evidence, we expected religiosity to negatively relate to intense sexual behavior, measured in our study as the frequency of various kinds of sexual acts, be they religiously or socially unconventional and non-universally normative (anal sex), not encouraged (masturbation), or religiously tolerated or accepted and socially encouraged conventional and normative heterosexual behavior. A critical reason for the above expectation comes from substantial evidence showing a fundamental opposition between religion and sensual pleasure: even among young people of very secular Western European countries in the 1990s and 2000s, religiosity is typically associated with low endorsement of the value of hedonism (Roccas & Elster, 2013; Saroglou, Delpierre, & Dernelle, 2004; Schwartz, 2012).

## **2.2 Related Affects and Thoughts**

How and why does religiosity predict low and restrictive sexual behavior? We hypothesized that religiosity is related to key moral emotions (guilt and disgust), physiology-based individual differences (inhibition), and affective and cognitive dispositions (low search for sexual pleasure and low sexual fantasy), which in turn diminish sexual behavior. For some of the above constructs, there exists evidence that they mediate the relationship between religion and sexuality; the other constructs are tested here for the

first time, to our knowledge. Integrating all these constructs into a single model in the same study is an additional step forward with regard to the existing literature.

Sexual guilt denotes the belief that sex is immoral and that sexual thoughts and acts are subject to punishment (Mosher & Cross, 1971). Most religions, at least the monotheistic ones, have associated sexuality, or aspects of it, with sin and subsequent punishment. For instance, in Christianity, the original sin has received a sexual connotation across centuries. Familiarized with a Judeo-Christian culture, Freud (1907/1961) has argued that the religious aim is to both allow a canalized expression of sexual guilt and to repress sexual desire. Several studies, consistently across decades, have shown that religiosity relates positively to sexual guilt, which in turn leads to more restrictive sexuality (Gunderson & McCary, 1979; Woo et al., 2012; Wyatt & Dunn, 1991).

Sensitivity to disgust and the related moral value of purity refer to thoughts and feelings of fear of contamination by unhealthy, dirty, and/or immoral elements, and this extends from the physical to the moral domain (Rozin et al., 2016). Purity is a central value in the experience of the sacred—the latter even being defined as a space that is separated from the “profane”, in order to avoid contamination. This role of disgust and purity applies to religious beliefs (orthodoxy vs. heresy; Ritter, Preston, Salomon, & Relihan-Johnson, 2016), rituals (of moral cleanliness: Preston & Ritter, 2012), norms (of sexual and family morality; Deak & Saroglou, 2015; Olatunji, 2008), and groups (to protect themselves from ecumenism, schisms, and society’s immorality, mostly sexual; e.g., Ritter & Preston, 2011).

Disinhibition refers to a physiology-based disposition to prefer “out of control” activities. Not surprisingly, it fuels sexual desire and behavior (see the disinhibiting role of alcohol and peer pressure in sexual experiences: Dogan et al., 2010; Epstein et al., 2014), and does so even longitudinally (Khurana et al., 2012; Riggs et al., 2013). This disposition is to contrast with what is at the heart of religiosity, that is a “moral muscle”, self-control, and inhibitory resistance to temptations (Baumeister & Exline, 1999; McCullough & Carter, 2013, for a review). In favor of the idea that religion and disinhibition are mutually exclusive, especially with regard to sexuality, evidence shows that disinhibition in puberty predicts religious doubt (Saroglou, 2012) and that a sexual experience decreases spiritual aspirations among those high in disinhibition (Rigo et al., 2016).

Search for sexual pleasure is very likely the most critical motive for (frequent) sexual behavior (Meston & Buss, 2007). Similarly, sexual fantasy is an important contributor to sexual desire and has a central role in maintaining, anticipating, and repeating sexual activities, including solitary ones (Leitenberg & Henning, 1995). Search for pleasure and fantasy constitute affective and cognitive components of sexual desire. With regard to religiosity, they cannot simply be considered as constructs that overlap with (intense) sexual behavior and permissive sexuality. If religious morality inhibits immoral acts more than immoral thoughts (e.g., among Jews: Cohen & Rozin, 2000), then religiosity’s negative associations with sexual behavior should be clearer than religiosity’s negative associations with sexual fantasy and search for pleasure. However, given the clear associations reported above between religiosity and a low consideration of the value of hedonism and low impulsivity and disinhibition, we expected religiosity to predict low sexual pleasure and fantasy, and in turn low sexual behavior. Indeed, there is evidence that intrinsic religiosity, not only conservative and fundamentalist religiosity, predicts low sexual fantasy (Ahrold et al., 2011).

### **2.3 A Cross-Cultural/Religious Perspective: Christianity and Islam**

Does theory and evidence on the religion-sexual behavior relationships apply to all religions, or at least to all monotheistic ones? In this work, we focused on Christianity and Islam. The fact that both Christianity and Islam have established rules and justifications across centuries aiming to canalize, if not restrict, sexuality or at least some aspects of it (Hunt & Yip, 2012; Thatcher, 2015), indicates that both religions involve some negative views about sexuality that should translate into contemporary religionists' sexual attitudes and behaviors across both religions. Moreover, the fact that large international studies (Saroglou, 2018, for a recent review) have found that individuals' Christian and Muslim affiliation and country's Christian or Muslim heritage imply a lower tolerance of specific sexual and family-related behaviors (homosexuality, divorce, premarital and extramarital relations) compared, respectively, to non-religious individuals and secular contexts, indicates strong commonalities between these two religions in the way sexuality is affected. From a more psychological perspective, a low consideration for the value of hedonism (Saroglou et al., 2004) and a strong valorization of an ascetic perspective in life, for instance in work (Saroglou, 2018, for review) have been found to be typical of both Christian and Muslim persons and societies.

However, beyond these commonalities, it is possible that religiosity in an Islamic context may have different outcomes than Christian religiosity either on sexuality in general, or on some particular sexual issues. Two rationales suggest divergent, to some extent, predictions regarding such possible differences. On the one hand, large international studies have indicated that restrictive sexuality- and family-related morality has a much stronger presence among Muslims than among Christians—even if they both similarly differ from the morality of nonbelievers (Adamczyk & Hayes, 2012; Hoffarth et al., 2017; Malka, 2014; Norris & Inglehart, 2004). Thus, one should expect greater concern, suspicion, and restriction of sexual behavior, including the mainstream one, among Muslims compared to Christians. This could be explained for instance by greater sensitivity to disgust and attachment to purity.

On the other hand, there is an extensive religious tradition in Islam of intra-marital sexuality, in particular when oriented toward fertility, being well valued, making this normative heterosexual intra-marital behavior well accepted (Dialmy, 2010). Fertility rates of Muslims are typically higher than those of Christians, across all major world regions (Pew Research Center, 2017). In Catholicism, in particular, chastity has been even more valued than marriage and family. Thus, one may expect Islamic religiosity to be negatively associated with various other sexual behaviors, but not to the mainstream, fertility-oriented, intra-marital, normative sexuality. Similarly, in this context, some critical determinants of sexual behavior, such as the search for sexual pleasure, may not be negatively affected by Islamic religiosity.

### **2.4 Overview of the Studies**

Across two studies, we investigated each time the relationships between religiosity and various aspects of sexual behavior, mostly normative conventional heterosexual acts, but also less conventional sexual practices, i.e. anal sex and masturbation. We also investigated whether religiosity predicts relevant moral emotions, affects, and thoughts, that

is increased sexual guilt, high sensitivity to disgust/attachment to purity, low disinhibition, low sexual fantasy, and low search for sexual pleasure, and whether these effects can explain the relationship between religiosity and less frequent sexual behavior. We also examined the possible role of gender and relational status. Participants in Study 1 were Western Europeans of Christian tradition. Study 2 aimed to replicate the findings of Study 1 among Westerners or North Africans of Muslim tradition and identify possible cross-religious differences, in particular ones due to a clearer emphasis of Islam on intra-marital sexuality and fertility.

### 3. Study 1

#### 3.1 Method

##### 3.1.1 Participants

Participants were 276 adults ranging in age from 17 to 77-yrs old ( $M = 24.46$ ,  $SD = 7.28$ ; 58 % women) recruited on social networks (French-speaking). Participants were mostly from Belgium (62%) and France (29%), with the remaining participants coming from other countries (9%). In terms of religious affiliation/conviction, participants were Catholics (47%), atheists (39%) and agnostics (12%), and the remaining 2% reported “other”. Sixty-three percent of the participants reported to be in a relationship and 37% reported to be single. The original sample was slightly larger (316), but, given the focus of the study on heterosexuality, we excluded from the analyses 30 participants who reported being a virgin and 10 participants who self-identified as gay or lesbian. The number of participants, to have a sufficient power of .80, based on previous evidence on the religiosity-sexual attitudes and behavior links ( $r$ s typically varying from .15 to .25) was 270.

##### 3.1.2 Measures

**Religiosity.** Personal religiosity was measured through a 3-item religiosity index including the importance of God and the importance of religion in the participant’s personal life, as well as the frequency of prayer ( $\alpha = .89$ ; 7-point Likert scales). This index has been found to well represent intrinsic religiosity (Saroglou & Mathijsen, 2007).

**Mediators.** Participants first completed measures of sexual guilt, sensitivity to disgust, purity as a moral foundation, and disinhibition, using 7-point Likert scales. *Sexual guilt* was measured through the 10-item revised Mosher Sex-Guilt Scale (Janda & Bazemore, 2011);  $\alpha$  in the present data = .75). A sample item is “When I have sexual dreams I try to forget them”. *Sensitivity to disgust* was measured through the 12 Likert-type statements of the revised Disgust scale (Olatunji et al., 2007). A sample item is “If I see someone vomit, it makes me sick to my stomach”. The value placed on *purity* (considering the body as a temple that can be desecrated by immoral activities and contaminants) was assessed through six items from the Moral Foundations Questionnaire (Graham et al., 2011;  $\alpha = .65$ ). A sample item consists on evaluating as right or wrong “Whether or not someone violated standards of purity and decency”. For the economy of the analyses and the presentation of results, we averaged for each participant the sensitivity to disgust items and the purity items (variable hereafter called “disgust/purity”;  $\alpha = .72$ ). Finally, we included

the 10 items of the *Disinhibition* subscale of the Sensation Seeking Scale (Zuckerman, Eysenck, & Eysenck, 1978) that measures one's search for intense experiences in activities like parties, social drinking, and sex ( $\alpha = .82$ ). A sample item is "I like wild parties".

Participants then completed measures of two basic motivational components of sexual behavior, that is proneness to sexual fantasy and the search for pleasure in sexual activities. Proneness to *sexual fantasy*, was assessed using seven items from the index of sexual fantasy (Hurlbert & Apt, 1993) ( $\alpha = .79$ ). A sample item is "I'm easily aroused by sexual thoughts". Search of *sexual pleasure* as being the main goal in sexual activities was assessed through four items from the Pleasure subscale of a scale measuring the various reasons humans give of having sex (Meston & Buss, 2007) ( $\alpha = .87$ ). A sample item is "I have had sex in the past because... it feels good".

**Sexual behaviors.** Finally, participants were asked to report the frequency of 16 sexual behaviors. The items were taken from (Farmer et al., 2009). Four items were specifically worded for heterosexual women: (1) *Kissing, petting with a male*; (2) *Mutual petting of genitals to orgasm with male*; (3) *Having genitals orally stimulated by a male*; and (4) *Giving oral stimulation to a male*. Four other items were specifically worded for heterosexual men: (5) *Kissing, petting with a female*; (6) *Mutual petting of genitals to orgasm with female*; (7) *Having genitals orally stimulated by a female*; and (8) *Giving oral stimulation to a female*. The remaining eight items concerned both genders: (9) *Masturbating alone*; (10) *Finger penetration of vagina*; (11) *Finger penetration of partner's anus*; (12) *Mutual oral stimulation of genitals*; (13) *Vaginal intercourse (male on top)*; (14) *Vaginal intercourse (female on top)*; (15) *Vaginal intercourse (entry from behind)*; and (16) *Anal intercourse*. Participants rated the frequency of their behaviors on 7-point Likert scales (1 = *never* and 7 = *always*).

An exploratory factorial analysis, using Oblimin rotation, of the 12 (8 common, 4 gender-specific) questions suggested four clusters explaining 76% of the variance: masturbation (item 9), foreplay (items 1, 2, 3, 4, 5, 6, 7, 8, 10, and 12), vaginal intercourse (items 13, 14, and 15), and anal behaviors (items 11 and 16). We also noted that the foreplay factor was highly intercorrelated with the vaginal intercourse factor ( $r = .72$ ), whereas intercorrelations between the other factors were weak ( $r$ s varied from .05 to .36). Therefore, for the economy of the analyses and the presentation and interpretation of results, we retained three kinds of sexual behavior variables and computed the average scores for the respective items. These were: (1) *Masturbation*—a single sexual activity, often condemned by conservative religious discourse as deviating from procreation's goals; (2) *Common heterosexual behavior*--foreplay and vaginal intercourse items, referring to normative, conventional sexuality necessary for procreation and tolerated by religions only within marriage; and (3) *Anal sexuality*—which is often condemned as non-normative, deviating from procreation's goals, and being more typical in homosexual male relations.

### 3.2 Results

Means and standard deviations for all measures, as well as intercorrelations between them, are detailed in Table 1. All hypothetical mediators showed meaningful associations: sexual pleasure, sexual fantasy, and disinhibition, positively interrelated, were associated with higher frequency of all three sexual behaviors; sex guilt and disgust/purity, interrelated and inversely related to the former constructs, were associated with less frequent sexual behaviors (only one out of the 18 correlations was nonsignificant).

Table 1.

*Means, Standard Deviations, and Intercorrelations Between All Measures (Study 1: Christian Tradition's Sample)*

|                     | <i>M</i> | <i>SD</i> | 2      | 3      | 4       | 5       | 6       | 7       | 8       | 9      |
|---------------------|----------|-----------|--------|--------|---------|---------|---------|---------|---------|--------|
| 1. Religiosity      | 2.14     | 1.49      | .45*** | .32*** | -.18**  | -.18**  | -.19**  | -.04    | -.24*** | -.05   |
| 2. Guilt            | 2.25     | 0.82      |        | .44*** | -.35*** | -.54*** | -.40*** | -.37*** | -.33*** | -.16** |
| 3. Disgust/Purity   | 3.55     | 0.70      |        |        | -.20**  | -.24*** | -.20**  | -.24*** | -.25*** | -.18** |
| 4. Disinhibition    | 3.93     | 1.12      |        |        |         | .39***  | .25***  | .41***  | .18**   | .05    |
| 5. Fantasy          | 5.51     | 0.96      |        |        |         |         | .42***  | .44***  | .37***  | .18**  |
| 6. Pleasure         | 6.16     | 1.16      |        |        |         |         |         | .22***  | .32***  | .10+   |
| 7. Masturbation     | 4.33     | 1.63      |        |        |         |         |         |         | .13*    | .16**  |
| 8. Com. heter. beh. | 4.64     | 1.23      |        |        |         |         |         |         |         | .35*** |
| 9. Anal sex         | 1.69     | 0.99      |        |        |         |         |         |         |         |        |

*N* = 276. Com. heter. beh. = Common heterosexual behavior.

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

Table 1 also includes the correlations between religiosity and the sexuality-related measures. To determine if the results held for both genders and for participants of both relationship statuses, that is single and coupled, we also computed the same correlations distinctly for each subgroup. This provided a more precise and accurate information than simply controlling for gender and relationship status in partial correlations on the total sample. Results are presented in Table 2.

Table 2.

*Correlation Coefficients Between Religiosity and Sexual Attitudes and Behaviors, Distinctly by Gender and Relationship Status*

|                                        |           | Guilt  | Disgust/<br>Purity | Disinhi-<br>bition | Sexual<br>Fantasy | Search f.<br>Pleasure | Mastur-<br>bation | Common<br>heter. beh. | Anal sex |
|----------------------------------------|-----------|--------|--------------------|--------------------|-------------------|-----------------------|-------------------|-----------------------|----------|
| Study 1: Sample of Christian tradition |           |        |                    |                    |                   |                       |                   |                       |          |
| Gender                                 | Men       | .49*** | .41***             | -.24**             | -.22*             | -.23*                 | -.13              | -.21*                 | -.03     |
|                                        | Women     | .43*** | .28***             | -.17*              | -.19*             | -.20*                 | -.07              | -.28***               | -.09     |
| Status                                 | In couple | .45*** | .36***             | -.13+              | -.12              | -.13+                 | -.03              | -.21**                | -.10     |
|                                        | Single    | .46*** | .27**              | -.27**             | -.26**            | -.30**                | -.10              | -.29**                | .06      |
| Study 2: Sample of Muslim tradition    |           |        |                    |                    |                   |                       |                   |                       |          |
| Gender                                 | Men       | .71*** | .61***             | -.48***            | -.19*             | -.16                  | -.51***           | -.14                  | -.15     |
|                                        | Women     | .57*** | .34***             | -.47***            | -.20*             | .02                   | -.28**            | -.07                  | -.05     |
| Status                                 | In couple | .62*** | .43***             | -.54***            | -.18*             | -.03                  | -.34***           | -.03                  | -.04     |
|                                        | Single    | .65*** | .52***             | -.31*              | -.35*             | -.09                  | -.41**            | -.31*                 | -.35*    |

*Note.* *N*s: Sample 1: men, women = 113, 163; in couple, single = 175, 101; Sample 2: men, women = 55, 115; in couple, single = 126, 43.

The results in the total sample showed that religiosity was related to all hypothesized mediating variables, that is positively with guilt, and negatively with disgust/purity, disinhibition, sexual fantasy, and search for pleasure. Furthermore, religiosity was negatively associated with the reported frequency of common heterosexual behavior, whereas unrelated to the two other sexual behaviors of masturbation and anal sex.

Distinct by gender correlations confirmed this pattern for both men and women; and, as far as men's masturbation and women's anal sexual behavior are concerned, the negative associations between religiosity and the non-normative sexuality became stronger than in the total sample, yet still nonsignificant. (Note that men scored higher in almost all sexuality-related mediators, i.e. non-disgust/purity, disinhibition, fantasy, search of pleasure, all  $p$ s < .001, and the two unconventional sexual behaviors, i.e. masturbation,  $p$  < .001, and anal sex,  $p$  = .026).

Moreover, distinct by relationship status correlations showed that the pattern of results found in the total sample hold for both participants who may currently be single as well as those who were in a couple. The religiosity's association with low frequency of sexual behavior increased in size, but still did not reach significance, as far as single's masturbation and couple's anal sex were concerned. (Note that those in couples reported more frequent heterosexual behavior, whereas singles reported higher disinhibition and more frequent masturbation, all  $p$ s < .001; no differences were observed in religiosity).

Given that religiosity was related to sexual behavior and that the hypothesized mediators were related to both religiosity and sexual behavior, we subsequently conducted structural equation modeling analysis using the AMOS software, version 20 (Byrne, 2009). The model controlled for possible theoretical and empirical overlap between the five hypothesized mediators, as well as between the different kinds of sexual behavior. We tested a mediation model where the links of religiosity with two sexual behaviors, masturbation and common heterosexual behavior, were indirect, passing through five variables: sexual guilt, disgust/purity, disinhibition, sexual fantasy, and search for pleasure. The anal behavior was not included in the model because, in addition to the non-significant correlation with religiosity, the mean frequency of this behavior, as shown in Table 1, was extremely low. In order to evaluate the fit of the model, the corresponding statistic indexes were used: chi-square statistic, the normed fit index (NFI), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA). The model showed a good fit to the data:  $\chi^2(8) = 21.22$ ,  $p = .007$ ,  $NFI = .96$ ,  $CFI = .97$ , and  $RMSEA = .078$ , with 90%  $CI = [0.04, 0.12]$ . The indirect effect for mainstream sex was  $-0.09$ ,  $p = .006$ , with 95%  $CI [-0.20, -0.05]$ , and for masturbation  $-0.16$ ,  $p = .004$ , with 95%  $CI [-0.28, -0.11]$ . Precisely, religiosity predicted all hypothesized inhibitory sexual variables: high sexual guilt and disgust/purity, as well as low disinhibition, proneness to sexual fantasy, and search for sexual pleasure. In turn, guilt, low disinhibition, and low fantasy—but not disgust and search for pleasure—predicted a low frequency of masturbation; and low sexual fantasy and search for pleasure predicted a low frequency of common heterosexual behavior.

### 3.3 Discussion

In a rather secular, i.e. of low mean religiosity, but still balanced sample of about half Catholics and half non-believers from very secular Western European countries (Belgium and France), in line with our expectations, personal religiosity was found to be related to low frequency of common heterosexual behavior and to be negatively associated with affects and thoughts facilitating that behavior (disinhibition, search for sexual pleasure, and sexual fantasy) while positively associated with moral emotions undermining it (sexual guilt and disgust/purity). Remarkably, all the above relationships were present among both men and women and among both single and coupled participants. Finally, the association between religiosity and low common heterosexual behavior was indeed partly mediated by decreased sexual aspirations at the cognitive (fantasy) and the affective (search for pleasure) levels.

The fact that religiosity, in bivariate correlations, was negatively related only to common heterosexual behavior but not to masturbation and anal sex could simply be due to the low predictive capacity of the one-item indicator of masturbation and the very low reported frequency of anal sex. Nevertheless, religiosity also indirectly predicted low frequency of masturbation, through high inhibition and sexual guilt and low sexual fantasy. Finally, though all five hypothesized mediators were meaningfully related to both sexuality and religiosity, disgust/purity failed to directly or indirectly mediate religiosity's effect on decreased sexual behaviors. It may be that the measure was conceptually too broad including items from all three subscales, i.e. core, animal reminder, and contamination, and not focusing on the sexual aspects. Indeed, as suggested by Tybur, Lieberman, and

Griskevicius (2009) sexuality can elicit specific kind of disgust, preventing individuals from engaging in non-beneficial sexual relation<sup>4</sup>.

## **4. Study 2**

In Study 2, we aimed to replicate and cross-culturally/religiously validate and extend the results of Study 1 based on a sample of individuals of Christian tradition, by asking the same research questions in a sample of Muslim tradition participants. For reasons we detailed in the introduction, this study has additional and unique intellectual interests. Because of commonalities between monotheisms regarding sexual morality, one should expect similar findings between Christians and Muslims. But based on several specifics in Islamic teachings, in highly valuing intra-marital fertility, differences should exist between Muslim single and non-single participants or between Muslim and Christian participants who are in a relationship.

### **4.1 Method**

#### **4.1.1 Participants**

Participants were 170 adults ranging in age from 18 to 53-yrs old ( $M = 25.31$ ,  $SD = 6.06$ ; 71 % women), recruited on social networks (French-speaking), and having parents of North African and Turkish origin. Participants were mostly from Belgium or France (81%) and North Africa (13%), with the remaining participants coming from other countries (6%). In order to be sure of participants' origins, we asked about the origin of their father, which was North Africa (76%; mostly Morocco), Belgium or France (9%), Middle-East (7%), and other (8%), as well as the origin of their mother, which was North Africa (68%), Belgium or France (16%), Middle-East (7%) and other (9%). Participants mostly self-identified as Muslims (74%), whereas 26% self-identified as non-believers. Seventy-five percent of the participants reported to be in a relationship. The original sample was larger (280), but, given the purpose of the study, we excluded from the analyses 84 participants who reported being a virgin, 16 participants who reported being gay or lesbian, and 10 participants for which there was no evidence of Muslim ethnic/religious background on the basis of the parents' country of birth and/or reported religious affiliation other than Muslim.

#### **4.1.2 Measures**

We measured religiosity, sexual behaviors, and hypothesized mediators, that is sexual guilt, disgust/purity, disinhibition, sexual fantasy, and search for sexual pleasure, as in Study 1. The only difference was that, to facilitate the analyses, we did not distinguish sexual behavior items referring to men from those referring to women, but rather replaced "men" or "women" by "partner". Like in Study 1, we grouped the scores of the various items of sexual behaviors under three types: masturbation, common heterosexual behavior, and anal sex. (The intercorrelation between foreplay and vaginal intercourse was again very high,  $r = .60$ , compared to all other intercorrelations, which varied from .17 to .36).

---

<sup>4</sup> For more in-depth discussion, see the general discussion of this thesis (p. 143)

Reliabilities for all measures were satisfactory, with Cronbach's alphas ranging from .70 to .88.

## 4.2 Results

Means, standard deviations, and intercorrelations for all measures are detailed in Table 3. As in Study 1, the intercorrelations between the hypothesized mediators as well as their correlations with the sexual behaviors were significant and in the meaningful direction--only two out of the 36 correlations were non-significant.

Table 3.

*Means, Standard Deviations, and Inter-correlations Between All Measures (Study 2: Muslim Tradition's Sample)*

|                     | <i>M</i> | <i>SD</i> | 2      | 3      | 4       | 5       | 6      | 7       | 8       | 9       |
|---------------------|----------|-----------|--------|--------|---------|---------|--------|---------|---------|---------|
| 1. Religiosity      | 5.16     | 2.01      | .62*** | .45*** | -.49*** | -.21**  | -.05   | -.36*** | -.11    | -.12    |
| 2. Guilt            | 3.48     | 1.37      |        | .58*** | -.65*** | -.46*** | -.26** | -.47*** | -.27*** | -.30*** |
| 3. Disgust/Purity   | 4.39     | 1.02      |        |        | -.33*** | -.23**  | -.06   | -.32*** | -.12    | -.15*   |
| 4. Disinhibition    | 2.92     | 1.35      |        |        |         | .48***  | .33*** | .54***  | .29***  | .31***  |
| 5. Fantasy          | 3.95     | 1.09      |        |        |         |         | .39*** | .49***  | .42***  | .21**   |
| 6. Pleasure         | 5.35     | 1.59      |        |        |         |         |        | .23**   | .38***  | .26**   |
| 7. Masturbation     | 3.52     | 1.94      |        |        |         |         |        |         | .23**   | .36***  |
| 8. Com. heter. beh. | 4.88     | 1.19      |        |        |         |         |        |         |         | .32***  |
| 9. Anal sex         | 1.66     | 1.20      |        |        |         |         |        |         |         |         |

For exploratory reasons, we compared the means of this study's sample (majority Muslim) with those of Study's 1 sample (majority Christian). It turned out that the former sample was higher on religiosity, sexual guilt, and disgust/purity, and lower on all other sexuality-fueling affects and cognitions (disinhibition, sexual fantasy, and search for pleasure) as well as the frequency of masturbation,  $F_s(1,440) > 5.69$ , all  $ps < .001$ , except for disinhibition,  $p = .004$ . No difference was found between the two groups for the frequency of foreplay and anal intercourse, but the Muslim tradition group reported higher vaginal intercourse than the Catholic tradition group,  $F(1,440) = 2.25$ ,  $p = .025$ .

Correlations between religiosity and all the sexuality-related measures, in the overall sample, are also detailed in Table 3. As in Study 1, religiosity was positively related to sexual guilt and disgust/purity, and negatively related to disinhibition and sexual fantasy. However, religiosity was unrelated to the search for sexual pleasure. Moreover, like in Study 1, religiosity had an overall negative relationship with the frequency of sexual behaviors, but, unlike Study 1, the significant difference was for masturbation—and not for common heterosexual behavior.

To better examine whether the above pattern of results hold for both men and women, and for both single and coupled persons, we computed distinct by subgroup correlations (see Table 2), rather than trusting partial correlations controlling for gender or relationship status. (Note that men reported higher frequencies of all sexual behaviors—and not only for the unconventional, as in Study 1; and higher disinhibition, sexual fantasy, and search for pleasure—but the two genders did not differ in guilt and disgust/purity). All the associations found in the overall sample, between religiosity and all five hypothesized sexual mediations as well as masturbation, were significant for both men and women and for both single and coupled persons. Furthermore, the remaining associations between religiosity and common heterosexual and anal sexual behaviors were negative across the four groups, and were strongest and significant among the single participants. Note also that, similarly to Study 1, compared to singles, coupled participants reported a higher frequency of foreplay and—at a marginally significant level—vaginal intercourse, whereas the singles reported a higher frequency of masturbation and greater disinhibition; no differences on religiosity were observed.

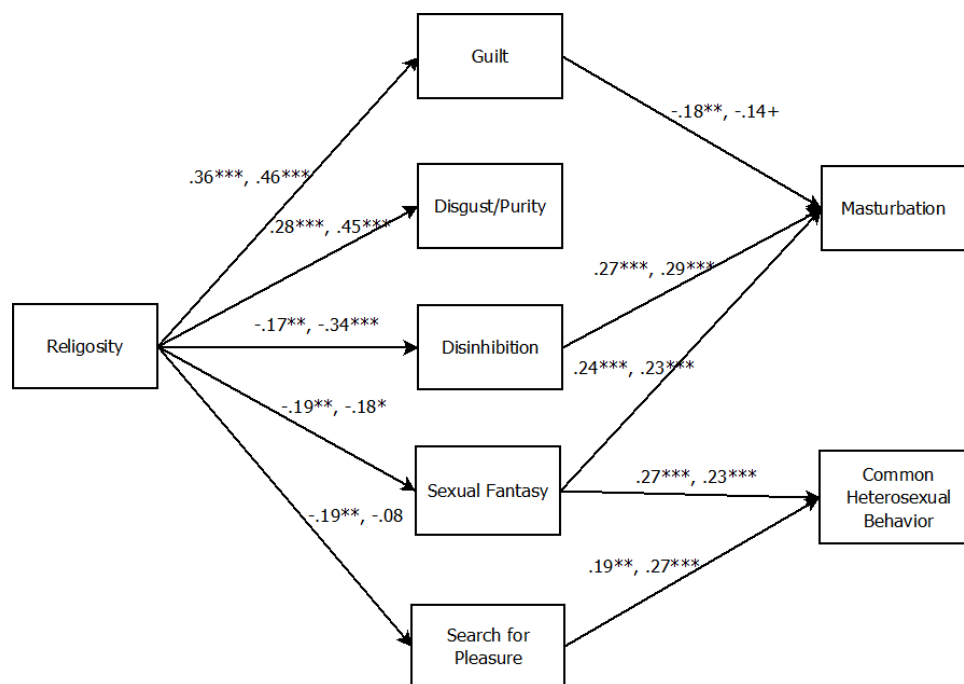


Figure 1. Religiosity as predicting low frequency of sexual behaviors through sexuality-related affects and cognitions, in Study 1 (Christian tradition sample) and Study 2 Muslim tradition sample, numbers in italics). Numbers on paths represent standardized coefficients.

+  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

As in Study 1, we tested a mediation model, with the five hypothesized variables as mediators (guilt, disgust/purity, disinhibition, sexual fantasy, and search for sexual

pleasure) and the two behaviors, masturbation and common heterosexual behavior, as outcomes (see Figure 1).

Like in Study 1, the mean frequency of anal behavior was extremely low, compared to the other behaviors. The model showed a good fit to the data:  $\chi^2(8) = 5.39$ ,  $p = .715$ , NFI = .98, CFI = 1, and RMSEA = .000, with 90% CI = [0.00, 0.07]. The indirect effect for mainstream sex was  $-0.05$ ,  $p = .077$ , with 95% CI [-0.11, 0.00] and for masturbation  $-0.17$ ,  $p = .016$ , with 95% CI [-0.26, -0.10]. Precisely, religiosity predicted sexual guilt, disgust/purity, low disinhibition, and a low proneness for sexual fantasy—but not a significantly low search for sexual pleasure. In turn, guilt, low disinhibition, and low fantasy—but not disgust and search for pleasure—predicted low masturbation frequency; and low sexual fantasy and search for pleasure predicted a low frequency of common heterosexual behavior.

### 4.3 Discussion

Study 2, carried out on a sample of Muslim tradition, replicated most of the findings of Study 1 (sample of Christian tradition). All five hypothesized mediators were related to the frequency of all three kinds of sexual behavior—only one of the 15 correlations was nonsignificant; and religiosity was related to four out of the five hypothesized mediators, i.e. high guilt and disgust/purity and low disinhibition and sexual fantasy. Moreover, religiosity indirectly predicted (in mediations) low frequency of (1) common heterosexual behavior, through decreased sexual fantasy and search for sexual pleasure, and (2) masturbation, through increased sexual guilt and decreased disinhibition and sexual fantasy (the religiosity-low masturbation link was even direct in Study 2). The above findings held for both genders and for both relationship statuses. These similarities between the two studies underline the fact that religion's suspicion of sexuality is not restricted to Christianity, whose theology is perceived as having amplified sexual guilt, but extends to the second major world religion, i.e. Islam. The underlying psychological mechanisms seem also to be the same.

However, Study 2 also provided notable differences in results compared to Study 1. Religiosity was directly unrelated to low search for sexual pleasure and was associated with decreased heterosexual behavior (common and anal) only among single people, but not among people in couple—which in the case of this predominantly Muslim sample meant mostly married. These findings can be interpreted as pointing out to the fact that Islam is more tolerant of, if not valuing, intramarital sexuality, and this because of strong emphasis placed on fertility. As the results of the present study suggest, even if it sustains emotions, affects, and thoughts undermining sexuality (guilt, disgust/purity, inhibition, and low sexual fantasy), Muslim religiosity (1) does not inhibit search for pleasure, i.e. the most basic motive to have sex—and thus procreate, (2) does not inhibit fertility-oriented heterosexual behavior among married partners, but (3) inhibits masturbation, i.e. a prototype of sexual behavior not contributing to procreation, and (4) inhibits heterosexual behavior among single people, i.e. premarital and extra-marital, not fertility-oriented, sex.

Finally, the mean differences between the two samples, with Muslims being much higher than Catholics on religiosity—but still with a non-negligible variability—and significantly lower in affects, emotions, and cognition favoring sex, as well as on frequency of masturbation (but, again, not on frequency of common heterosexual behavior) are in line

with the general pattern coming from large international data. The more a society is religious, the more people are conservative, in favor of a restrictive socio-sexuality (e.g., Doeblér, 2015); and Muslim individuals and societies are the highest on fertility (Pew Research Center, 2017).

## 5. General Discussion

Consistently across two studies, we found that, across religious traditions (Christianity and Islam), genders, and relationship statuses, people who were more religious, compared those who were less or nonreligious, were characterized by stronger feelings of sexual guilt, higher sensitivity to disgust and attachment to purity, higher physiology-based inhibition, and lower cognitive propensity for sexual fantasy. These religious tendencies in moral emotions, affects, and thoughts, in turn, directly or indirectly, impacted sexual behavior, i.e. predicted less frequent common heterosexual behavior and/or masturbation. The effects were not weak, but typically moderate, varying, across outcomes, from  $> .20$  to almost  $.50$ . Overall, the findings indicate that the conflict between religion and sexuality does not belong to a historical past, but still colors and affects people's sexual lives, in terms of affects, moral emotions, cognitions, and behaviors. This includes even normative and "everyday" sexuality (masturbation and common heterosexual behavior), and does not only refer to liberal, unconventional, non-normative sexual behaviors viewed with social, moral, and/or explicit religious suspicion (e.g., premarital or extramarital sex, homosexuality, or multiple sexual relations). Also, whereas the present findings cannot be generalized to all world religions, it is of interest to note that Christians and Muslims together represent about 55% of the world population (Pew Research Center, 2017).

Moreover, these effects were found even in contexts, like that of Study 1, where traditional theological, at least Christian, discourse has progressively been replaced by more positive consideration and valorization of body, body-related emotions, sexual pleasure, and sexual behavior, at least in the context of a loving, faithful, heterosexual relationships, preferably within marriage. Interestingly, analyses of large international data suggest that, when moving from traditional societies to modern and secular ones, although restrictive socio-sexuality is on average attenuated, even among religionists, the associations between individual religiosity and restrictive socio-sexuality become stronger, because of the greater variability of individual differences on moral attitudes within these societies (Saroglou, 2018, for review).

An interesting pattern of differences, from a cross-cultural/religious psychological perspective, was found between the two samples. Unlike for the Christian tradition sample in Study 1, in the Muslim tradition sample of Study 2, religiosity was not negatively related to sexual pleasure and did not directly predict decreased heterosexual behavior among married participants --but only among those who were single. Inversely, religiosity's role in decreasing the reported frequency of masturbation was clearer in the Muslim tradition sample, compared to the Christian tradition sample. These findings denote the consequences of a much higher emphasis in Islam on the ideal of fertility (Pew Research Center, 2017) and thus the acceptance of sexual pleasure to facilitate intra-marital, procreation oriented, heterosexual behavior. Instead, in Western Christianity, sexuality may be seen with more generalized suspicion, because of the moral questions it raises: hedonism instead of asceticism, and self- or couple-focus instead of work- and society-oriented

concerns. Interestingly, across the world, contemporary Catholics, compared to other Christians or Muslims, seem more tolerant--or less intolerant--of homosexuality (e.g., Malka, 2014) and, as the present work suggests, of masturbation: the moral priority seems to be the concern of whether satisfaction of sexual interests harms the broader society and other domains of human activity, rather than the concern for fertility regulation.

Across the two studies, the only unexpected null findings were that frequency of anal behavior seemed unaffected by religiosity, except among single Muslims, and that sensitivity to disgust/purity failed to play an explanatory role in the religiosity-low sexual behavior association, though such sensitivity was related to both religiosity and infrequent sexual behavior. We do not see theoretical reasons to change our expectations. First, when gathering the two samples together (the low mean scores and low variability of the frequency of anal behavior may have contributed to a Type II error), anal behavior was significantly negatively related to religiosity:  $r = -.14$ ,  $p = .004$ . Second, the items selected to measure disgust/purity referred to subcomponents of disgust and purity that were too varied.

The gender similarity on religion's role with regard to sexual affects, emotions, thoughts, and behaviors needs to be commented. Though men of both studies confirmed the stereotype of men being more sexually interested and involved in sexuality than women, religious men, similarly to women, tended to report infrequent sexual behavior and restrictive sexual affects, emotions, and thoughts. Thus, in line with findings from large international data (Schmitt & Fuller, 2015), these results indicate that religion's discomfort with sexuality could be universal as resulting from deep psychological reasons and not solely from patriarchal beliefs preferentially restricting women's socio-sexuality. If anything, the negative associations between religiosity and sexual outcomes were consistently stronger, sometimes double in size, for men, compared to women (in 13 out of 16 cases; see Table 2). If this is not by chance, it could be due to higher variability, among men than women, of sexuality-related attitudes and behavior. It may also be that, at least in secularized contexts (because across the world, the effects are larger for women; Schmitt & Fuller, 2015), men show higher variability on religious and moral attitudes compared to women, with men clearly "swimming against the stream" when they are religious.

Beyond its interest, this work also presents some limitations. First, all measures, in particular sexual behavior, were self-reported. It could thus be that religious respondents conform more to what is religiously normative, i.e. restrictive socio-sexuality, rather than accurately reporting their sexual behavior. Nevertheless, although discrepancies between self-reported and actual behavior cannot be fully excluded (e.g., Grubbs, Exline, Pargament, Hook, & Carlisle, 2015; Hook et al., 2015), there is evidence that religion's discomfort with sexuality goes beyond self-reports. As detailed in the Introduction, this evidence comes from longitudinal studies and experimental work. Second, the present results may be different, very likely in effect size rather than the direction of the associations, if one moves from Christianity and Islam to other religions, like Judaism or Buddhism, where, all else being equal, there seems to exist more tolerance for some sexuality- and family-related moral issues (Norris & Inglehart, 2004; see also Saroglou, 2018, for review). Third, the results of the tested mediations showed that the hypothesized mediators explained only part of religiosity's effects. Further research should identify and investigate additional hypothetical explanatory variables. Finally, we do not deny the possibility that some specific religious forms and expressions of faith and spirituality, such

as the sanctification of sexuality (Hernandez et al., 2013) or a religion-as-quest orientation (Rowatt & Schmitt, 2003), may not imply restrictive or inhibitory forms of sexual life.

Beyond these limitations, the present works sheds light on how deep, through relevant emotions, affects, and thoughts, religiosity's role on sexuality can be. Though this issue can stand on its own in terms of its theoretical and societal importance for understanding individuals' and groups' sexuality and moral differences and conflicts in contemporary societies, it also has non-negligible health implications. Sexual life in general, and in particular among couples, contributes to one's well-being and happiness and to partners' and spouses' global and sexual satisfaction, as well as to one's children's well-being. Thus, it is of critical importance to know the implications that religiosity has on sexual life, from thoughts and affects to desire and behavior.

## Chapter 3

### **Couple relationship quality and the role of religiosity: A dyadic analysis of self- and partner-ratings using the Actor-Partner Interdependence Model**

---

Reference:

Rigo, C., & Saroglou, V. (2018). *Couple relationship quality and the role of religiosity: A dyadic analysis of self- and partner-ratings using the actor-partner interdependence model*. Manuscript submitted for publication.



## **1. Abstract**

Does religiosity enhance couple relationship quality, but undermine sexuality-related aspects of it? Are these links similar for men and women, influenced by both actor and partner, and observable through self- and partner-ratings? Replicating and extending previous research, we investigated how, in a secular cultural context, religiosity relates to (a) the three components of the triangular love (passion, intimacy, and commitment), self-evaluated, as well as (b) relationship satisfaction and sexual satisfaction, evaluated through self- and partner-ratings. Data from 83 heterosexual, married or unmarried, adult couples showed that women's, but not men's, religiosity relates to low passion and intimacy, but not low commitment; and to low sexual, but not relationship, satisfaction, of both partners, be it self- or partner-rated. Religious dissimilarity also predicted low sexual satisfaction in women's evaluations. The conflict between religion and sensual pleasure is still present, even in secular societies, and may undermine global relationship quality.



## 2. Introduction

Couple relationship quality is an important aspect of life quality and well-being, and predicts many positive outcomes for both partners and the whole family (Fellows, Chiu, Hill, & Hawkins, 2016; Robles, Slatcher, Trombello, & McGinn, 2014). Religious attitudes, beliefs, and practices of partners, as well as religious (dis)similarity between them, have been theorized and have been found to play some role on couple relationship quality (Mahoney, 2010; Mahoney et al., 2001). This is because of specific affinities between (a) religious ideas, practices, and norms and (b) the domains of love relationships, sexuality, marriage, family, and parenting (Mahoney, 2010; Saroglou, 2018).

Nevertheless, several issues remain unclear, understudied, or simply unexplored. First, does partners' religiosity, including their religious (dis)similarity, play a role in *all* major aspects of relationship quality? We anticipated that a sharp distinction may exist between (a) global relationship quality and non-sexual components of it, such as commitment, and (b) sexuality-related aspects of relationship quality such as sexual satisfaction, erotic love, and physical and emotional intimacy. Moreover, does religiosity of *both partners* matter, and does it imply both individual and cross-partner associations with aspects of the relationship quality? We anticipated this should be the case, though, if anything, women's religiosity may play a greater role. Furthermore, can the above expected associations be observed through both *self-reports and partner-ratings*? We also anticipated this should be the case. In addition, we investigated the associations between partners' religiosity and aspects of couple relationship through *dyadic analyses*, i.e. by taking into account partners' interdependence and thus using the Actor-Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006). Finally, most previous research has investigated the links between religiosity and couple relationship satisfaction by focusing in married couples living in relatively religious countries--mainly the US. We aimed to extend, including cross-culturally, the evidence on the above issues. We anticipated that our expectations would hold in loving couples independently of their *marital status* and living in a highly *secularized cultural context* like the one of Western Europe.

Below, we review the relevant research, develop our rationale, and specify the hypotheses. To avoid possible heterogeneity between generations, we focus the literature review principally on studies published in the 2010s. Similarly, for the purposes of the present study, we focused on studies on heterosexual couples.

### 2.1 Religiosity and Couple Relationship Quality

There is considerable evidence indicating that personal religiosity, spirituality, and different dimensions of them (belief, practice, norms, intrinsic orientation) often relate positively to global marital quality, satisfaction, and adjustment (in the US: Busby, Willoughby, & Carroll, 2013; Olson, Marshall, Goddard, & Schramm, 2015; Wilmoth, Blaney, & Smith, 2015; see also Mahoney, 2010, and Mahoney et al., 2001, for earlier reviews). This seems to hold across various racial and ethnic groups within the US (Cutrona, Russell, Burzette, Wesner, & Bryant, 2011; Perry, 2016b) and extends to other

groups like Jewish women in Israel (Lazar, 2016), Iranian Muslims (Mirghafourvand, Farshbaf-Khalili, & Ghanbari-Homayi, 2018), and inhabitants of United Arab Emirates (Al-Darmaki et al., 2016).

The positive association of religiosity with marital satisfaction has been found to be partly explained by more focused aspects of the relationship such as low negative interactions and high marital generosity and forgiveness (David & Stafford, 2015; Wilcox & Dew, 2016). Moreover, religious/spiritual commitment appears to also have a buffering role on sources of stress and adversity in marital relationships (Olson et al., 2015). It mitigates negative effects of gender traditionalism on relationship outcomes (Perry & Whitehead, 2016), leads to marital satisfaction also among married adults who are caregivers of their aged parents (Murphy, Nalbone, Wetchler, & Edwards, 2015), attenuates the deleterious effects of attachment avoidance on marital adjustment (Pollard, Riggs, & Hook, 2014), and predicts greater stress-related growth among first-time parents being in the last months of the pregnancy (Lucero, Pargament, Mahoney, & DeMaris, 2013).

However, these effects are often weak in size, in line with an earlier meta-analysis where the mean effect sizes of the associations of marital satisfaction with religious variables are .05 (affiliation), .07 (attendance), or .15 (personal religiousness) (Mahoney et al., 2001). Furthermore, several studies indicate no significant associations between religiosity and marital satisfaction-related variables (see several studies included in Mahoney et al., 2001; see also Pollard et al., 2014, as regards attachment anxiety) or a positive association only for partners with low neuroticism (Sullivan, 2001). Even more, religiosity may turn out to *undermine* marital satisfaction. For example, religious commitment may reflect fathers' anxiety during pregnancy (Lucero et al., 2013), exacerbate the negative association between attachment anxiety and marital adjustment (Lopez, Riggs, Pollard, & Hook, 2011), and lead to decreased marital satisfaction when husbands are high in neuroticism (Sullivan, 2001).

## **2.2 Religiosity and the Sexuality-Related Aspects of Couple Relationship Quality**

We argue that one reason explaining why religiosity may not clearly predict marital satisfaction is that religiosity undermines sexual satisfaction and related to sexuality aspects of the relationship quality such as erotic love which implies passion and intimacy. In fact, religiosity should imply two diverging “effects”, i.e., on the one hand, increased relationship quality as far as sexual aspects of it are not concerned (for example, commitment and global satisfaction) and, on the other hand, decreased sexual satisfaction, intimacy, and passion. Moreover, given that sexual satisfaction is a critical component of marital and relationship satisfaction (e.g., Byers, 2005), the negative association of the latter with religiosity would undermine the somehow positive link between religiosity and relationship quality.

Indeed, there is substantial evidence showing that religiosity is negatively related to sexual attitudes and behavior, including intra-marital one, and that it implies restrictive

socio-sexuality, and this across religions and cultures (Li & Cohen, 2014; Rigo & Saroglou, 2018; Schmitt & Fuller, 2015; see also Saroglou, 2018). Though low frequency of sexual behavior does not necessarily lead to low sexual satisfaction, evidence suggests that overall positive sexual attitudes and frequent and diverse sexual behavior contribute to sexual satisfaction (Frederick et al., 2017).

Nor surprisingly thus, religiosity has often been found to relate to low sexual satisfaction (Hackathorn et al., 2016; Higgins, Trussell, Moore, & Davidson, 2010; Sierra, Ortega, & Gutiérrez-Quintanilla, 2008). The negative link between religiosity and sexual satisfaction may also be indirect and/or partly explained by religiosity's association with negative sexual attitudes (del Mar Sánchez-Fuentes et al., 2014; Sierra et al., 2008) and high sexual guilt (Hackathon et al., 2016).

Nevertheless, some studies failed to show a (negative) relationship between religiosity and sexual satisfaction (Cranney, 2017, a multi-country study in sub-Saharan Africa; McFarland, Uecker, & Regnerus, 2011, a study in the US). Exceptionally, religiosity was found to predict high sexual satisfaction, but this was with a very specific sample of US students of a conservative University who had actively looked for feedback on their relationship (Hardy & Willoughby, 2017) and with a (very heterogeneous) sample of Spanish adults (Neto & Pinto, 2013)<sup>5</sup>.

On the basis of the whole evidence, we thus hypothesized *a contrast between relationship satisfaction and sexual satisfaction, as it regards religiosity. The latter should imply a weak positive association with relationship satisfaction (Hypothesis 1), but a negative association with sexual satisfaction (Hypothesis 2). Moreover, given the strong conflict between religiosity and sexual part of the relationship, as well as the interrelation between the two kinds of satisfaction, the positive link between religiosity and marital satisfaction will be suppressed when the sexual aspects of the relationship (i.e. sexual satisfaction) are considered (Hypothesis 3).*

Similar hypotheses can be drawn if we focus on the three major components of love, following Sternberg's (1997) theory: intimacy, passion, and commitment. "*Passion* reflects the physical attraction and arousal between romantic partners, and a need for physical proximity. *Intimacy* encompasses feelings of mutual trust and connectedness within a romantic relationship. These feelings allow partners to engage in mutual self-disclosure, and to share their secrets and most intimate feelings with each other. Finally, *commitment* refers to the conception or decision that the current relationship will last" (Sumter, Valkenburg, & Peter, 2013, p. 417).

---

<sup>5</sup> High sexual satisfaction was also found to be a function of high sanctification of marital sexuality, i.e. considering marital sexuality as sacred (Hernandez, Mahoney, & Pargament, 2011; Hernandez-Kane & Mahoney, 2018), and high "religious influence on sexual expression", i.e. perception of one's own sexual life as influenced by religion (Iveniuk, O'Muircheartaigh, & Cagney, 2016). We do not consider these studies as questioning the overall pattern of negative associations between religiosity and sexual satisfaction, because the specific variables used in those studies do not tap aspects of religiosity per se, but religious/spiritual valorization of sexuality. This, in addition, may imply some conceptual overlap between the predicting variables and the outcome.

To our knowledge, no study has investigated the associations of religiosity with the three love components. Based on the above theorization and evidence on religiosity and restricted sexuality and sexual satisfaction, on the one hand, but enhancing marital stability, on the other hand (Mahoney, 2010; Mahoney et al., 2001),

We hypothesized *religiosity to be positively related to commitment, but negatively to passion, and possibly intimacy* (Hypothesis 4).

Indeed, passion has an explicit connotation of sexual pleasure and physical proximity, thus it should be negatively related to religiosity. Intimacy, though less physical, more emotional, still implies strong physical and psychological proximity and is characteristic of erotic love, contrary to other forms of love like compassion, or other forms of relationships like friendship. Thus, if anything, intimacy should follow passion, and not commitment, as regards the (negative) association with religiosity. Interestingly, though the three components are interrelated, only commitment predicts relationship stability; passion does the opposite (Campbell & Kaufman, 2017).

### **2.3 The Role of Gender, Actor and Partner, Marital Status, and Secularized Context**

In this section, we will examine whether the religiosity-relationship quality links may be similar or different for men and women, individuals (actors) and their partners, married and unmarried couples, and secular versus religious cultural contexts.

#### **2.3.1 Gender, Religiosity, and Relationship Quality**

Several studies suggest that the associations between religiosity and marital satisfaction, or the effects of religiosity in buffering sources of marital dissatisfaction, hold regardless of gender (Henderson, Ellison, & Glenn, 2018; Mahoney, 2010; Perry, 2016a). The relationship between religiosity and marital commitment also seems similar for men and women (Owen, Rhoades, Stanley, & Markman, 2011). However, there is also evidence that such effects are clearer for women (Cutrona et al., 2011) who benefit more from religiosity when, for instance, facing the negative effects of gender traditionalism (Perry & Whitehead, 2016). Nevertheless, results are more mixed when it comes to marital stability since it is unclear whether the latter is predicted better by men's or women's high religiosity (see Mahoney, 2010).

The above similarities between men and women denote the fact that religiosity's role in strengthening some (non-sexual) aspects of relationship quality, in particular through commitment, can be equally present in both genders. Nevertheless, the clearer, for women, results can be interpreted as suggesting that women, compared to men, being more religious and to some point more sensitive to the sources of relationship distress, may benefit more from religion and/or need more resources to face negative influences in the relationship.

We thus *expected that, if any gender differences, these would be in favor of clearer, among women, associations of religiosity with relationship satisfaction (at least in its non-sexual aspects) and commitment* (Hypothesis 5).

### **2.3.2 Gender, Religiosity, and Sexual Satisfaction**

Whereas theory and evidence suggest that religiosity predicts more restricted sociosexuality among both men and women (Schmitt & Fuller, 2015), the hypothetical inhibiting explanatory mechanisms playing a role in both genders (Rigo & Saroglou, 2018), the effects, such as negative sexual attitudes, low frequency of sex and other indicators of sexual practice, seem to be clearer or stronger among women (Schmitt & Fuller, 2015). This can be explained in several ways. Religious norms are more prevalent among, the typically more religious, women. Moreover, the evolutionary explanations of the restricted versus permissive strategies in sociosexuality are in correspondence with the higher patriarchal and gender-related religious norms. Finally, women's sexuality fits better with the religious consideration of sexuality emphasizing interpersonal communion more than sexual pleasure.

Therefore, though the negative association between religiosity and sexual satisfaction may hold among both men and women (del Mar Sánchez-Fuentes et al., 2016), when gender differences are significant, it is religious women rather than religious men who, more clearly or uniquely, report low sexual satisfaction and low sexual self-esteem (Abbott, Harris, & Mollen, 2016). Similarly, though religiosity predicts less reported pornography view and more related guilt in both men and women, it moderates among women but not men the effect of pornography view on reduced sexual satisfaction (Cranney & Štulhofer, 2017). Moreover, the association between sexual satisfaction and relationship satisfaction has been found to be weaker among Jewish religious compared to secular women (Lazar, 2017). Going even further in the men-women discrepancy, one study found that men's but not women's religiosity relates to high sexual satisfaction (Iveniuk et al., 2016).

Therefore, *we expected that, if any gender differences, a negative association of religiosity with sexual satisfaction and the erotic love-related components of passion and intimacy should exist more clearly among women* (Hypothesis 6). Moreover, *given the important role of sexual satisfaction on the more global relationship satisfaction, we also hypothesized that the stronger, among women, negative association between religiosity and the sexual aspects of the relationship quality may undermine, more importantly than for men, the hypothesized positive association of religiosity with relationship satisfaction and commitment* (Hypothesis 7).

### **2.3.3 Actor and Partner and Religious Similarity's Effects**

Another question is whether there is also a partner effect, in other words whether, not only religiosity of each person (*actor effect*), but also religiosity of one's own partner (*partner effect*) influences each actor's relationship quality and sexual satisfaction. These influences should be unique, i.e. observable beyond partners' interdependence

(connections, most often similarities, between the thoughts, feelings, and behaviors of one partner with the thoughts, feelings and behaviors of the other partner). Analysis of dyadic data, i.e. data collected from each partner of the couple, under the framework of the Actor-Partner Interdependence Model (APIM), allows for such examination, thus using the dyad as the unit of the analysis.

Some studies have recently investigated the role of religiosity on relationship quality using the APIM and have provided evidence partly confirming the idea of some partner effect too. Specifically, actor's, but not partner's, sanctification of marriage or religious communication in the couple has been found to predict marital quality (Stafford et al., 2014) and forgiveness of the partner (David & Stafford, 2015). Yet, other studies showed cross-partner effects, with sanctification of marriage by husbands and wives predicting their respective behaviors aiming to maintain the relationship, what in turn predicted respectively *wives'* and *husbands'* marital quality (Stafford, 2016). Similarly, spousal religiosity predicts one's own marital satisfaction and intensifies the negative effect of porn viewing on marital satisfaction (Perry, 2016a). Spousal religiosity may have even a stronger effect on marital satisfaction than one's own religiosity (Al Darmaki et al., 2016). Nevertheless, other studies indicate both actor and partner effects: spouses' religious relational life predicts both their own and their partner's observed problem-solving behaviors (Rauer & Volling, 2015); and spouses' negative relationship with God predicts low marital adjustment for themselves and their partner (Knabb, 2014). Finally, women's partner effect seems clearer: women's, rather than men's, religiosity impacts their own marital satisfaction (actor effect) but also their husbands' one (partner effect) (Sabey, Rauer, & Jensen, 2014).

Regarding the sexual and erotic aspects of the relationship quality, it is the first time in our knowledge that the relationship between partners' religiosity and their sexual satisfaction, passion, and intimacy, will be examined using the APIM model.

Therefore, *we expected both actor and partner effects on aspects of relationship quality, and, if any gender differences, women's religiosity should be more capable of showing partner effects. This should apply to positive associations for the non-sexual aspects of relationship quality and negative associations for the sexual aspects of it* (Hypothesis 8).

To better solidify the data, we included both self-reports and partner-ratings. This was to control for possible social desirability bias. For instance, individuals could in their self-reports amplify or attenuate relationship satisfaction or sexual satisfaction, in particular as a function of what they perceived to be religiously or socially normative. Moreover, such partner-ratings would provide additional information on the role religiosity plays on couple's relational quality, not only in terms of self-perception, but also in terms of how people perceive their partner's satisfaction.

Finally, there is evidence showing high similarity in religiosity among married and loving couples (Henderson et al., 2018; McClendon, 2016). Moreover, religious similarity--denominational homogeneity and/or similar religious attitudes, beliefs, or practice--between

partners is positively associated with various aspects of relationship quality (Gurrentz, 2017; Olson, Marshall, Goddard, & Schramm, 2016; Schramm, Marshall, Harris, & Lee, 2012) and may have a buffering effect on sources of marital instability (Olson et al., 2015).

Therefore, *we expected religious similarity to relate positively (or inversely, religious dissimilarity to relate negatively) to all aspects of relationship quality* (Hypothesis 9).

### **2.3.4 Marital Status and Secular Context**

Religion puts a strong normative emphasis on marriage and the prohibition of premarital and extramarital relationships, as well on tolerance of sexuality only or rather within marital relationships and mostly for procreation motives; this is attested as a function of personal religiosity across cultures and the major world religions (Saroglou, 2018, for a cross-cultural review). Consequently, one could suspect religiosity to contribute, to some extent, to relationship satisfaction among married people rather than among unmarried couples, and to undermine sexual satisfaction in particular among unmarried couples.

However, there is evidence indicating that the somehow positive link of religiosity with global (marital) relationship satisfaction and quality apply also to unmarried or cohabitant people (Henderson et al., 2018); the same is true for commitment (Owen et al., 2011). Cohabiting couples also tend to show religious homogeneity (Blackwell & Lichter, 2004). Sharing similar religious beliefs and values predicts relationship satisfaction among cohabiting and dating couples, and this partly thanks to frequent acts of kindness and consideration and infrequent criticism by each of the partners (Henderson et al., 2018). The above can be understood especially in the context of secular modernity, where premarital relationships become dominant and the number of unmarried couples is increasing, also among religious believers, who may entertain a nonmarital still stable and faithful relationship (see Henderson et al., 2018, and Mahoney, 2010).

Furthermore, it may be that the negative association between religiosity and the sexual aspects of the relationship quality applies only to unmarried people; or that it applies to both married and unmarried individuals. For instance, sex guilt mediates the negative link between religiosity and sexual satisfaction among unmarried but not married people (Hackathorn et al., 2016). Catholics' religiosity is related to low frequency of sexual behavior in single but also in married adults (Rigo & Saroglou, 2018).

Therefore, *we expected, at least in a secularized context, the associations of religiosity with the nonsexual and the sexual aspects of relationship quality to hold even after controlling for marital versus non-marital status* (Hypothesis 10).

Finally, it is of particular interest to investigate whether the expectations presented in this Introduction apply to a secularized cultural context like the one of Western European countries--in this study, Belgium and France. Most of the studies reviewed here were carried out in the US, where religion is rather normative and (Christian) religious

participants on average more conservative. On the one hand, given some change in contemporary theological discourse emphasizing the positive aspects of sexuality for a healthy loving relationship, at least within Christianity in a secularized world (Thatcher, 2015), one could expect the negative link between religiosity and sexual satisfaction and erotic love to be weak or null. On the other hand, cross-cultural evidence shows that the religiosity-sexuality negative links become stronger in secularized compared to religious societies because of higher variation in individual differences regarding religious and moral attitudes (Saroglou, 2018).

### 3. Method

#### 3.1 Participants

Participants were 166 heterosexual adults composing 83 couples and ranging in age from 20 to 73-yrs old ( $M = 34.51$ ,  $SD = 12.65$ ). They were recruited through social networks via a snowball sampling technique. The study was simply advertised as a psychological investigation in couple relationships. Participants were mostly (82%) from Belgium (French-speaking part), 10% from France, and the remaining 8% from other countries. They self-identified as Catholic (57%), atheist (19%), or agnostic (11%), whereas the remaining 13% did not respond or selected “other” but did not specify.

In terms of civil status, 37% reported to be married, 31% cohabitant, 31% single<sup>6</sup>, and 1% divorced. To be recruited, partners had to be in relationship for at least three years and to live together. Couple partners were required to fill online separately the survey and the two partners provided the same code (birthdate of the oldest partner followed by the birthdate of the youngest), to allow the researchers to match couples' partners.

At the beginning of the protocol, participants were invited to complete measures of religiosity, relationship satisfaction, and sexual satisfaction. Afterwards, they were requested to rate their partner on relationship satisfaction and sexual satisfaction.

#### 3.2 Measures

**Religiousness.** Participants were presented a 3-item index including the importance of God and the importance of religion in one's personal life, and the frequency of prayer ( $\alpha = .91$ ), as well as a one-item indicator of the importance of spirituality in one's personal life (7-point Likert scales). A score of religious dissimilarity was in addition created as the absolute difference when subtracting women's religiosity from men's religiosity.

**Relationship satisfaction.** Relationship satisfaction was measured using the 10-item Marital Satisfaction subscale of the ENRICH Marital Inventory (Riecki et al., 2013;

---

<sup>6</sup> We refer here to the official civil status: single here means that people are not legally engaged to their partner but they are in a relationship

Willard & Norenzayan, 2013). Since parenthood was not the focus of the present study, one item evaluating how couples handle parenthood was not included. Two sample items are “I am very happy with how we manage our leisure activities and the time we spend together”, and “I am very happy about how we make decisions and resolve conflicts” (7-point scales). Items were adapted to refer to “current” relationship in general and not to “marital” relationship. In addition, participants filled in a partner version of the same measure where, instead of being asked “How do *you* feel in your current relationship”, participants were asked “How do *you think your partner* is feeling in your current relationship” ( $\alpha = .91$ , for self-ratings, and .80, for partner-ratings).

**Sexual satisfaction.** Participants completed the short version of the New Sexual Satisfaction Scale (Štulhofer, Buško, & Brouillard, 2010) consisting of 12 items. Two sample items are “I’m satisfied with the quality of my orgasms” and “I’m satisfied with the way I sexually react to my partner”. A partner version of the same measure was additionally administered where, instead of being asked: “evaluate your sexual satisfaction”, participants were asked: “evaluate your partner’s sexual satisfaction” ( $\alpha = .94$ , for both self- and partner-ratings; 7-point Likert scales).

**Triangular love components.** The three dimensions of love, i.e. intimacy, passion, and commitment, were measured through the Triangular Love Scale (Sternberg, 1997). The original scale encompasses 12 items for each of the three subscales, but to reduce the length of the survey we selected in total 15 items, i.e. by subscale, five (intimacy), three (passion) and seven (commitment), all loading the best on the respective factor, as in Sternberg (1997). A sample item, respectively for intimacy, passion, and commitment, was “I have a warm relationship with my partner”, “I find my partner to be very personally attractive”, and “I’m committed to maintaining my relationship with my partner”.

## 4. Results

Means and standard deviations for all measures, distinctly by men and women, are detailed in Table 1. No significant gender differences were found, except that women were evaluated by their male partner as being more sexually satisfied compared to how men were evaluated by their female partner,  $F(1,164) = 4.59$ ,  $p = .035$ . When comparing judgments, it turned out that both men and women perceived their partners as more satisfied with the relationship compared to what these partners themselves reported in their self-evaluations, respective  $F_s(1,164) = 19.02$  and  $7.81$ ,  $p < .001$  and  $p = .006$ .

Table 1

*Means and Standard Deviations for All Measures, Distinctly by Gender*

|                           | Male Partners |           | Female Partners |           |
|---------------------------|---------------|-----------|-----------------|-----------|
|                           | <i>M</i>      | <i>SD</i> | <i>M</i>        | <i>SD</i> |
| Love Components           |               |           |                 |           |
| Intimacy                  | 5.84          | 1.00      | 5.90            | 1.00      |
| Passion                   | 4.91          | 1.13      | 4.77            | 1.10      |
| Commitment                | 5.78          | 1.06      | 5.91            | 0.91      |
| Relationship Satisfaction |               |           |                 |           |
| Self-rated                | 4.76          | 0.77      | 4.77            | 0.83      |
| Partner-rated             | 5.16          | 0.63      | 5.03            | .068      |
| Sexual Satisfaction       |               |           |                 |           |
| Self-rated                | 5.09          | 1.15      | 5.02            | 1.25      |
| Partner-rated             | 4.90          | 1.19      | 5.11            | 1.13      |
| Religiousness             |               |           |                 |           |
| Religiosity               | 2.40          | 1.55      | 2.47            | 1.56      |
| Spirituality              | 3.64          | 2.12      | 3.34            | 1.90      |

#### 4.1 Partner Validation, Similarity, and Congruence

Partner-ratings of relationship and sexual satisfaction *validated* men's and women's self-ratings (see Table 2), and this to a much stronger extent for sexual (.72 and .62) than for relationship (.31 and .37) satisfaction. Moreover, a moderate to important partner *similarity* was observed, through both self- and partner-ratings, in relationship ( $rs = .44$  and  $.44$ ) and sexual ( $rs = .64$  and  $.69$ ) satisfaction, all  $ps < .001$ . Partners were also similar in their self-evaluations of intimacy and passion ( $rs = .43$  and  $.41$ ,  $ps < .001$ ), as well as commitment ( $r = .23$ ,  $p = .033$ ). In addition, couples were importantly similar in their degree of religiosity,  $r = .53$ ,  $p < .001$ . Note that couples' possible dissimilarity in religiosity was not a confound of women's possible high religiosity: men and women did not differ significantly in religiosity, and the correlations of religious (dis)similarity with men's and women's religiosity were almost equal (respectively,  $.27$ ,  $p = .012$ , and  $.28$ ,  $p = .009$ ). Finally, evaluators had congruent representations of the couple in their mind, with the evaluations of their own satisfaction being importantly correlated with their evaluations of their partners' satisfaction, respectively for men and women evaluators,  $rs = .78$  and  $.82$ , for relationship satisfaction, and  $.87$  and  $.89$ , for sexual satisfaction, all  $ps < .001$ .

Table 2

*Intercorrelations Between All Variables, Distinctly for Male (Above the Diagonal) and Female Partners (Below the Diagonal)*

|                        | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10    |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| Love Components        |        |        |        |        |        |        |        |        |        |       |
| 1. Intimacy            |        | .72*** | .77*** | .76*** | .36*** | .60*** | .49*** | .03    | .11    | -.06  |
| 2. Passion             | .56*** |        | .70*** | .53*** | .42*** | .61*** | .57*** | .04    | -.03   | .02   |
| 3. Commitment          | .59*** | .35*** |        | .63*** | .33*** | .57*** | .47*** | .02    | -.09   | .08   |
| Relation. Satisfaction |        |        |        |        |        |        |        |        |        |       |
| 4. Self-rated          | .70*** | .45*** | .51*** |        | .31**  | .65**  | .51*** | -.12   | -.03   | -.05  |
| 5. Partner-rated       | .41*** | .46*** | .23*   | .37*** |        | .60*** | .50*** | -.11   | -.03   | -.11  |
| Sexual Satisfaction    |        |        |        |        |        |        |        |        |        |       |
| 6. Self-rated          | .64*** | .46*** | .28*   | .57*** | .46*** |        | .72*** | -.01   | -.17   | -.07  |
| 7. Partner-rated       | .43*** | .42*** | .15    | .29*   | .70*** | .62*** |        | -.18   | -.11   | -.27* |
| Religiousness          |        |        |        |        |        |        |        |        |        |       |
| 8. Religiosity         | -.20+  | -.24*  | .12    | -.20+  | -.08   | -.25*  | -.25*  |        | .63*** | .27*  |
| 9. Spirituality        | -.03   | -.14   | .13    | -.08   | -.06   | -.16   | -.22+  | .64*** |        | .03   |
| 10. Rel. Dissimilarity | -.12   | -.02   | .04    | -.17   | -.03   | -.23*  | -.06   | .28*   | .07    |       |

+  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

## 4.2 Bivariate Individual Correlations Between All Measures

Correlations between all variables, distinctly for male and female partners, are presented in Table 2. All variables relative to the relationship, i.e. the three love components (self-evaluated), as well as relationship satisfaction and sexual satisfaction (self- and partner-rated), were positively intercorrelated, and this most often moderately or importantly.

Religiosity and/or spirituality, among women, tended to be negatively associated with most variables related to the relationship, and this was significant for religiosity as related to low intimacy and passion, low self-rated relationship satisfaction, and low self- and partner-rated sexual satisfaction, as well as for spirituality as related to low partner-rated sexual satisfaction. Interestingly, the negative associations of religiosity with intimacy and passion contrasted with religiosity's (positive) association with commitment, and the differences between these correlations were significant,  $z = -3.16$ ,  $p = .002$ , 95% CI [-0.52,

-0.12], for intimacy, and  $z = -2.83$ ,  $p = .004$ , 95% CI [-0.62, -0.11], for passion (Meng, Rosenthal, & Rubin, 1992),  $z$  for within the same group correlations concerning overlapping constructs; two-tailed). Among men, several similar tendencies for negative links were observed between religiosity and relationship satisfaction and between religiosity/spirituality and sexual satisfaction. These associations were not significant but they were not significantly different from the ones among women mentioned above, all  $z$ s < .092.

Controlling for marital status (married vs. unmarried) in partial correlations did not provide any significant associations between men's religiosity and their intimacy, passion, commitment, relationship satisfaction, and sexual satisfaction. Similar partial correlations controlling for marital status did not really change the significant associations between women's religiosity and their low passion ( $-.19$ ,  $p = .088$ ), low relationship satisfaction ( $-.19$ ,  $p = .081$ ), and low sexual satisfaction ( $-.23$ ,  $p = .038$ ).

Finally, the degree of religious dissimilarity among couples (see also Table 2), in both men and women, was unrelated to the three love components (intimacy, passion, and commitment) and relationship satisfaction, self- or partner-rated. However, religious dissimilarity was negatively related to sexual satisfaction in women's evaluations of both themselves and their partner. These two associations remained significant, even after controlling for marital status, respective  $r$ s =  $-.21$ ,  $p = .057$ , and  $-.24$ ,  $p = .029$ .

#### **4.3 Controlling for Possible Conflictual Links of Religiosity with Sexual vs. Non-Sexual Aspects of the Relationship**

To investigate whether sexual satisfaction may suppress a possible positive effect of religiosity on relationship satisfaction, we regressed, in two hierarchical regressions, one for men and one for women, the relationship satisfaction on religiosity (step 1) and then, additionally, on sexual satisfaction (step 2)—all measured were self-reported (see Table 3). Among men, the standardized  $b$  indicating how religiosity predicts relationship satisfaction remained stable between step 1 and step 2. Among women, the same coefficient  $b$  in step 1 ( $b = -.20$ ,  $p = .067$ ) almost disappeared in step 2 ( $-.06$ , *n.s.*). Adding in a next step 3 marital status did not change the above results.

Similarly, in two additional hierarchical regressions, one for men and one for women, we regressed commitment on religiosity (step 1) and then, additionally, on intimacy and passion aggregated in one index—to avoid multicollinearity effects (step 2) (see also Table 3)<sup>7</sup>. Among men, religiosity's predictive link of commitment did not change

---

<sup>7</sup> We decided to combine the subscales of intimacy and passion on the basis of the intercorrelations with religiosity presented for women in Table 2. Indeed, these two love components are negatively linked with religiosity, whereas commitment, even if it is not significant, seems to be positively linked. In addition, as noted above, differences between these correlations were significant. By doing so, we have on one hand love components that seem to conflict with religiosity and on the other hand a component that seems positively related to religion.

from step 1 to step 2, but among women, this link doubled in size and became significant ( $b = .26, p = .007$ ). Adding marital status in a next step 3 did not change the significant above effect ( $b = .23, p = .014$ ), though marital status predicted high commitment ( $b = .25, p = .007$ ).

Furthermore, we investigated, again, using self-reports, in men and women distinctly, whether religiosity may interact with sexual satisfaction in predicting relationship satisfaction. No such significant moderations were found.

Table 3

*Hierarchical Regressions of Non-Sexual Aspects of the Relationship on Religiosity and the Sexual Aspects of the Relationship (Self-Report Measures)*

| Commitment            |        |        | Relationship Satisfact. |        |        |
|-----------------------|--------|--------|-------------------------|--------|--------|
|                       | Men    | Women  |                         | Men    | Women  |
| Predictors            | $b$    | $b$    | Predictors              | $b$    | $b$    |
| Step 1                |        |        | Step 1                  |        |        |
| Religiosity           | .02    | .12    | Religiosity             | -.12   | -.20+  |
| Adj. $R^2 = .01, .00$ |        |        | Adj. $R^2 = .00, .03$   |        |        |
| Step 2                |        |        | Step 2                  |        |        |
| Religiosity           | -.01   | .26**  | Religiosity             | -.11   | -.06   |
| Intimacy & Passion    | .79*** | .61*** | Sexual Satisfaction     | .64*** | .56*** |
| Adj. $R^2 = .61, .33$ |        |        | Adj. $R^2 = .41, .31$   |        |        |

+  $p < .10$ . \*  $p < .05$ . \*\*\*  $p < .001$ .

#### 4.4 Dyadic Analyses through the Actor-Partner Interdependence Model

As noted above, the two partners' evaluations were highly intercorrelated. Given that non-independence between partners was confirmed for both religiosity and relationship-related variables, dyadic analyses were performed to investigate the effects of couples' religiosity in their couple satisfaction, by using the dyad as the unit of the analysis. Having a sample of 83 couples was sufficient for such analyses following Kenny et al. (2006) who recommend a minimum of 35 dyads. Through path analyses with dyadic data, we adopted the actor-partner interdependence model (APIM: Kenny et al., 2006). This allows for simultaneously investigating intra-individual and cross-partner associations. Accordingly, we tested in five models, at the dyadic level, the role of both *actor's* religiosity and *partner's* religiosity in predicting for both actor and partner (a) *relationship satisfaction*, as self-rated (Model 1) and partner-rated (Model 2) (Figure 1-top), (b) *sexual satisfaction*, as self-rated (Model 3) and partner-rated (Model 4) (Figure 1-bottom), and (3) *erotic love*, i.e. passion and intimacy aggregated into one index (Model 5) (Figure 2). The

five APIM models tested here demonstrated perfect fit ( $\chi^2 = 0.00(0)$ , CFI = 1.00, RMSEA = .000) as these models were fully saturated (i.e. all possible parameters were freely estimated). Also, the results presented above also hold when controlling for sexual satisfaction while investigating relationship satisfaction and when controlling for relationship satisfaction while investigating sexual satisfaction.

Model 1 did not to provide significant results. Model 2 provided one marginally significant link, with woman's religiosity predicting the male partner's perception of her relationship satisfaction as being low,  $\beta = -.11$ ,  $p = .10$ . In Model 3, women's religiosity was found to predict low women's,  $\beta = -.18$ ,  $p = .08$ , and men's,  $\beta = -.25$ ,  $p = .006$ , self-reported sexual satisfaction. In Model 4, women's religiosity was found to predict low sexual satisfaction in both partner-ratings, i.e. men's perception of their female partner's one,  $\beta = -.22$ ,  $p = .018$ , and women's perception of their male partner's,  $\beta = -.19$ ,  $p = .046$ , sexual satisfaction. Finally, in Model 5, women's religiosity predicted low erotic love (passion and intimacy) of both women (marginally significant,  $\beta = -.13$ ,  $p = .09$ ) and men ( $\beta = -.18$ ,  $p = .02$ ).

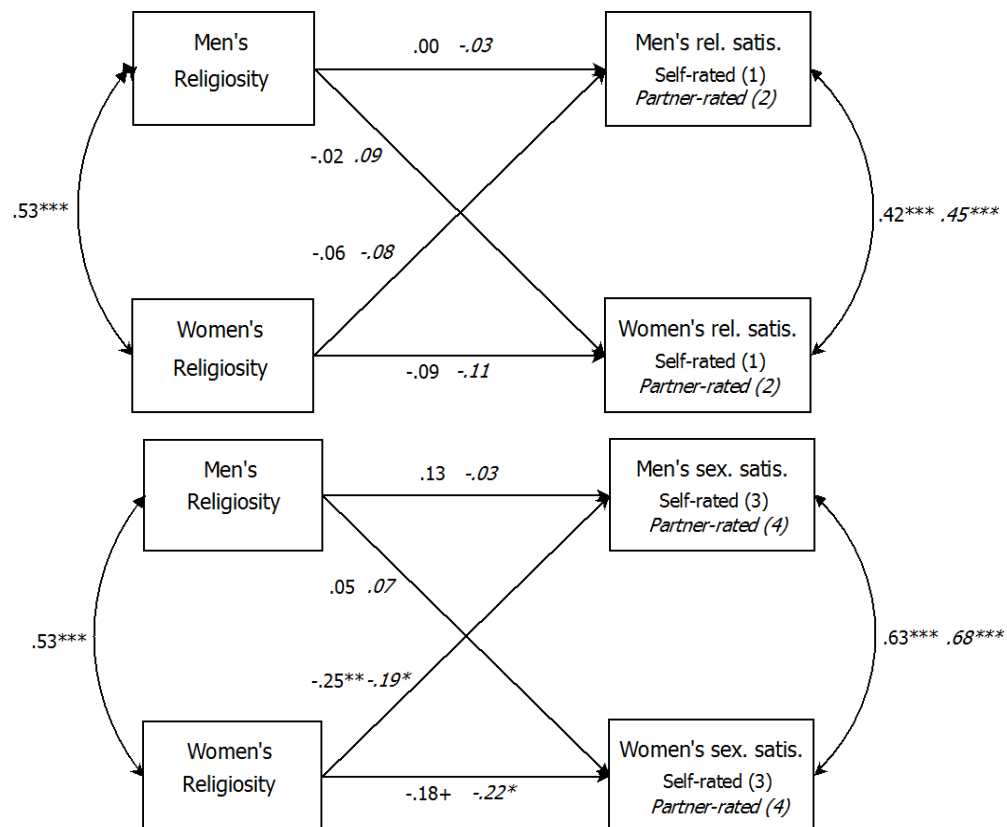


Figure 1. Partners' religiosity as predicting relationship satisfaction (top) and sexual satisfaction (bottom), as self-rated (Models 1 and 3) and partner-rated (Models 2 and 4).

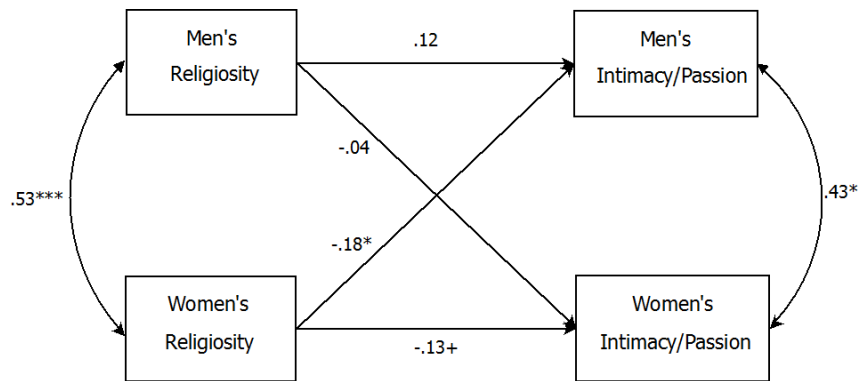


Figure 2. Partners' religiosity as predicting erotic love (passion and intimacy) (Model 5).

## 5. Discussion

In the present study, both adult partners in loving heterosexual couples, married or unmarried, provided self-evaluations of religiosity and the three components of triangular love (intimacy, passion, and commitment), as well as self- and partner-evaluations of relationship satisfaction and sexual satisfaction. Not surprisingly, there was high partner-validation of the self-reports, high similarity between partners in their self-reports, and high perceptual congruence, within evaluators, between one's own satisfaction and perception of partner's satisfaction. Also, both validation (self by partner) and similarity (self x self) were higher for sexual satisfaction compared to the relationship satisfaction.

In line with previous research on married and unmarried couples (Henderson et al., 2016; McClendon, 2016), considerable between partners similarity was observed on religiosity. Due to the very secular cultural context of the study, participants' mean religiosity was low. Nevertheless, there was non-negligible variability in religiosity, as well as in religious (dis)similarity between partners.

In line with our expectations and previous research reviewed in the Introduction, both religiosity and religious dissimilarity seemed to reflect individual differences on the couple relationship-related variables. This however concerned women's rather than men's religiosity, and sexuality-related aspects rather than other aspects of the relationship. Importantly, the outcomes of women's religiosity included men too, what means a "women partner effect", in addition to that of a "women actor effect", on sexual satisfaction.

Specifically, religious women tended to report low intimacy and passion in the loving relationship--but not low commitment. This negative link seemed to even suppress an otherwise positive association between women's religiosity and commitment. These findings confirm our idea of a clear contrast, with religious traditional and contemporary

norms on the one hand emphasizing relational commitment and related values of investment and stability, but on the other hand downplaying and restricting physical, sensual, and erotic proximity, stimulation, and passion.

Moreover, religious women, while not necessarily reporting low relationship satisfaction--the negative bivariate association between women's religiosity and their relationship satisfaction was no more significant in the dyadic analysis and approached zero when sexual satisfaction was controlled for--, tended to perceive themselves and their male partners as low in sexual satisfaction. The male partners of the religious women did the same: they perceived themselves and their female partners as low in sexual satisfaction. The cross-partner effects were shown in the dyadic analyses, but also in correlations ( $r_s = -.25$  and  $-.27$ ,  $p_s < .05$ ). Finally, couples' religious dissimilarity, though unrelated to both partners' relationship satisfaction, was negatively related to women's estimations of their own and their partner's sexual satisfaction.

Taken together, these results confirm our global idea of a contrast between relationship satisfaction and sexual satisfaction. On the one hand, religiosity do not undermine the global quality of couple relationship, and may even positively contribute to some of the components of the latter, such as stability, buffering sources of stress, forgiving, (Mahoney, 2010; Mahoney et al., 2001) and, as in the present study, commitment. On the other hand, the role of religion in restricting sexuality (Schmitt & Fuller, 2015), including via reduced sexual fantasy and pleasure and increased sex guilt (Rigo & Saroglou, 2018), seems to lead to reduced sexual satisfaction--the latter typically being an important, if not critical component of relationship satisfaction (Byers, 2005), including among our religious participants. Contrary to Lazar (2017), religiosity did not moderate the relationship between sexual satisfaction and relationship satisfaction.

The fact that the negative link between women's religiosity and sexual satisfaction was not limited here to their own self-reports but also extended to their evaluation of men's sexual satisfaction, as well as to men's evaluation of their own and their women partner's sexual satisfaction, suggests that such a negative link does not translate (only) an intimate individual estimation, but reflects a broadly shared experience or at least perception within the couple. Of course, the cross-sectional character of the study and the explicit paper-and-pencil nature of the measures do not prove any causal link going from religious attitudes to sexual satisfaction; and may have been amplified by a stereotypical perception of what is religiously normative. However, self-reported perceptions of, for instance, satisfaction are important components of well-being and reliable estimators of relationship quality (e.g., (Mirgain & Cordova, 2007), even if they may be inflated by self-enhancement motives (Wojcik & Ditto, 2014). Furthermore, longitudinal (Pedersen, 2014; Vasilenko & Lefkowitz, 2014) and experimental evidence (Rigo & Saroglou, 2013; Rigo, Uzarevic, & Saroglou, 2016) indicates causal, indeed bi-directional, links between religion and sexuality. Thus, the observed associations in the present work can be considered as very likely denoting real experience, and not too subjective explicitly self-reported estimations.

It is not sure why the observed outcomes among both partners, in the present work, resulted only from women's and not men's religiosity, especially since, in this particular study, women were not more religious than men. There is some evidence, across the world, that religiosity predicts restrictive socio-sexuality to a more important degree among women than among men (Schmitt & Fuller, 2015), but the difference is not high in size and the religion's restrictive effect on sexuality is often present in both genders (Schmitt & Fuller, 2015; see also Rigo & Saroglou, 2018). Nevertheless, there is evidence suggesting that there is a slight association of religiosity with neuroticism among women (see Saroglou, 2010, Table 4), and that women, as slightly higher in neuroticism-related tendencies, may need religion to foster well-being more than men do (McCullough & Laurenceau, 2005).

Prudence is needed not to generalize the present findings. First, the religious tradition of participants and the study's country was predominantly Christian, in particular Catholic. Though there are striking similarities between the major world religions and their religionists regarding restrictive socio-sexuality, there also exist non-negligible differences, at least in terms of the effects sizes (Saroglou, 2018, for review). For instance, guilt has been found to be, to some extent, higher in a Catholic compared to a Protestant context (Sheldon, 2006); and, when comparing (Catholic) Christians and Muslims, religiosity has been found to predict restrictive sexuality among single participants of both religions, but not among married Muslim adults (Rigo & Saroglou, 2018).

Second, the cultural context of the study being very secular, it is not sure that the results would be the same or of the same effect size in more religious societies. For instance, the association between individual religiosity and restrictive sexuality is more easily observable--for various possible reasons--in secular, compared to religious, countries (Saroglou, 2018, for a review). In contrast, the positive effects of individual religiosity on life satisfaction and aspects of well-being is much clearer in religious, often dysfunctional, countries, but less or not observable in secular, usually wealthy, countries (Diener, Tay, & Myers, 2011; Gebauer et al., 2017). Thus, it may be that, in religious countries, the observed here effect, i.e. women's religiosity predicting low sexual satisfaction of both partners, is less present, and that religiosity more clearly enhances relationship satisfaction.

To conclude, this work, in continuation with previous research, suggests that still today, and in the context of secular and liberal societies, religion implies some kind of conflict between, on the one hand, valuing commitment and quality in close relationships and, on the other hand, distrusting, canalizing, and restricting physical sensual proximity, sexuality, and sexual satisfaction, including in the context of loving and marital relationships. Given the implications of both sets of aspects for relationship quality and satisfaction in couples and family, further research on this area is welcomed, for both theoretical reasons and implications in professional practice.



## Conclusion PART I

---

This first empirical part highlighted the importance of considering religion-sexuality conflict as being more deeply embedded than previously considered. Indeed, the links between religion and sexuality appear as not simple and direct, but as resulting from underlying cognitive and emotional factors that are known to reflect important individual differences and personality dispositions.

Moreover, even if most of the results of the second study of Chapter 2 are in favor of strong similarities rather than differences between contemporary Christians and Muslims, at least when living in the same cultural context, we have also highlighted that the search for pleasure does not come into play in the religious-sexual conflict among Muslims. Moreover, for married Muslims, religion does not appear to inhibit reproductive sexual behavior. This may indicate the difference between the Catholic and Muslim religions, the former having a very moralizing discourse concerning any form of sexuality and the latter being more tolerant or even encouraging sexuality between spouses.

In addition to these results indicating that the effects of religion on sexuality are not limited to a specific population (with a particular affiliation, marital status or gender), we have also shown in Chapter 3 that conflict does not remain confined to the intra-individual level but can also extend to the couple and affect how partners perceive their conjugal and sexual satisfactions or how they perceive their love. We have also shown that religiosity can have antagonistic effects on partner satisfaction, which may on the one hand promote purely platonic aspects of the relationship and on the other hand diminish sexual aspects.

These results put together show how religion still has an impact on the sexuality of individuals, even in a secular context where it no longer seems to have any effect. These effects are an indication that this conflict is not simply the reflection of a residual religion (i.e. old-styled norms and values that are no longer important or existing in the present societies) but that it is the result of profound psychological mechanisms that can affect both the individual and his relationship. The fact that both men and women are impacted in the same way all the more supports this idea that psychological mechanisms are important to take into account, and not just a more patriarchal cultural context that would affect only women. However, given the findings raised in Chapter 3 highlighting a greater importance of women's religiosity than men's regarding partners' sexual satisfaction, it would be interesting to investigate the extent to which the internalization of psychological mechanisms related to religion would not be stronger and would therefore affect women's sexuality more broadly than men's. This could echo Social Role Theory (Eagly, 1987), in which gender differences can be found, women investing the expressive side while men are on the instrumental side. This point will be discussed further in the general discussion of this thesis.



## **Empirical Chapters – PART II**

---

This second empirical part aims to go further in the understanding of the religion-sexuality link, by testing the extent to which these two realities influence each other. To do this, we conducted six experimental studies, allowing us to infer causality.

The first study is not strictly speaking part of the empirical chapters of this thesis, but is presented in appendix (see Appendix 1). We tested the extent to which (implicit) religious priming will impact interest in erotic material. We have shown that people who have been subjected to religious priming and who have a low level of religiosity will look at erotic photos for less time than people who have been subjected to neutral priming. So this is in the sense that religion does have an impact on sexuality.

Two other studies testing this causal direction are presented in Chapter 4. In these studies, we will see how religious priming will somehow inhibit sexuality. We also wanted to test which aspects of sexuality would be impacted by this priming. To do this, we have used the most cited reasons for having sex, namely, search of pleasure and bonding as presented in the general introduction to this thesis, .

Finally, in the last empirical chapter of this thesis, we investigated the opposite, less intuitive, causal direction that goes from sexuality to religion. More precisely, we hypothesized that induction of sexuality-related thoughts and affects would result into less interest in religion-spirituality. Additionally, we included disinhibition (a subscale of the Sensation Seeking scale) as a potential moderator (Study 1) or mediator (Study 2).



## Chapter 4

### **Love, not only sex: Religious mindset makes sexuality more romantic**

---

Reference:

Rigo, C., Saroglou, V., & Jong, J. (2018). *Love, not only sex: Religious mindset makes sexuality more romantic*. Manuscript submitted for publication.



## 1. Abstract

Substantial previous research has attested the role of religious ideas and personal belief in implying *socio-restrictive sexuality*, even in secularized societies, very likely because of key evolutionary goals such as hygienic fertility and investment on the offspring. We argue that, in addition, religion encourages a cultural transformation of animal sexuality toward a *loving relationship*, possibly in order to solidify the duration of the relationship and, indirectly, the parents-offspring reciprocal attachment. Two experiments in two different cultural contexts, provided weak but meaningful evidence in favor of the above. Priming religious ideas increased *romanticism* in sexuality, i.e. emphasis on love and the relationship, as attested in participants' retrospective description of their personal sexual experiences (Experiment 1, but not Experiment 2) and made participants report higher sex motives for bonding with the partner, but not higher sex motives for pleasure (Experiment 2). The effects seemed clearer for the religious participants.



## 2. Introduction

Accumulated research in the last twenty years, with cross-sectional, longitudinal, cross-cultural, and international studies, has shown that, across religions and cultures, personal religiosity is typically associated with, and longitudinally predicts, a wide spectrum of restrictive rather than permissive sexual attitudes, norms, thoughts, affects, and behaviors (for reviews: Hernandez et al., 2014; Li & Cohen, 2014; Regnerus, 2009; Rostosky, et al. 2004; Saroglou, 2018; Zimmer-Gembeck & Helfand, 2008). Indeed, religiosity's effect on restrictive sexuality includes: delay of first intercourse; low levels of pre-marital and extramarital sex; preference for exclusive, heterosexual, and marital instead of polygamic, same-sex, and/or nonmarital sexual relationships; low frequency and variety of sexual behaviors, including within marriage; high sex guilt, low sexual desire and pleasure, low valuing of hedonism, and high endorsement of purity as a moral value; emphasis on intramarital fertility and investment of resources to the offspring; and disapproval of practices that oppose the previous, such as masturbation, abortion, and divorce. These trends also apply to religiosity in liberal and secularized countries (Saroglou, 2018, for review).

There is also emerging experimental evidence on causal links indicating a deeper discomfort between religion and sexuality. For example, priming of religious concepts has been found to increase negative evaluation of erotic pictures (Rigo & Saroglou, 2013), purity-related ideals (Preston & Ritter, 2012), and negative attitudes toward gay people (LaBouff et al., 2012), and to decrease men's displays of sexually selected behavior (McCullough et al., 2012). Conversely, immersion in a sexual mindset, through remembering one's own personal sexual experience, makes participants lower their spiritual interests (Rigo et al., 2016).

The role of religion in promoting restrictive sociosexuality has been interpreted by several scholars in evolutionary terms. Overall, the above-mentioned trends, across various cultural contexts, in sexual attitudes and behavior as a function of religion indicate religion's role in promoting hygienic sexual practices, avoidance of diseases, and thus survival, as well as both procreation *and* long-term investment on the offspring, as well as reduced conflict and violence through decreased intra-sex competition (Kirkpatrick, 2005; Li & Cohen, 2014; Schmitt & Fuller, 2015; Weeden & Kurzban, 2013).

In the present work, we argue that religion, in addition to favoring restrictive sexuality as described above, also encourages interpersonal bonding and love with the sexual partner that goes beyond sexual pleasure and the satisfaction of sexual desire. In other words, with regard to sexuality, religion may have played not only an *inhibitive* role, but also a *transformative* influence.

Such an influence may have served the evolutionary functions mentioned above. Indeed, love, emotional bonding, and other-oriented interest, adds to the merely sexual pleasure-oriented aspects of a sexual relationship, thereby facilitating the long-term maintenance of a loving couple relationship (Lehmiller, 2014). Second, indirectly, within the context of marriage and parenting, they should also facilitate long-term investment on the offspring and decrease, through partners' love-based fidelity, the risks for conflicts in case of extra-marital relationships—which again should maximize parental investment to the offspring. More generally, the above considerations favor the idea that religion may

have contributed to a cultural transformation of natural, non-human animal sexuality toward family-based loving units oriented to long-term children's growth and education.

In this exploratory work, we aimed to investigate whether religious concepts are associated with consideration of sexuality as implying interpersonal bonding and love between partners, in other words as more romantic. As a correlational study based on self-report measures might only reveal normative perceptions of sex, religion, and their relation, we first experimentally manipulated religion by priming religious ideas, as typically and successfully done in social psychological research in the last decade (see Shariff, Willard, Andersen, & Norenzayan, 2015, for a meta-analysis). Second, we used both quasi-behavioral, i.e. free response written descriptions, and self-reported indicators of consideration of sexuality as favoring interpersonal bonding and not only as sexual pleasure-oriented. Again, to avoid the mere activation of a stereotypical normative link between religion and love in intimate relationships, we focused not on how participants can envisage hypothetical or future sexual relationships but on how they retrospectively describe an actual past sexual experience. Finally, to avoid having evidence from a single study and cultural context, we carried out two experiments, with similar designs, one in Belgium (French-speaking part) and France, and the other in the US. Both cultural contexts are secularized ones though to a different degree, but they differ to some extent on religious heritage (respectively, Catholicism and Protestantism) and broader civilizational zone to which they belong (respectively, Western European countries and Anglo-Saxon countries; Inglehart & Welzel, 2005).

Several direct and indirect arguments, from both theory and empirical research, motivate our hypothesis. First, religion is commonly expected to promote and is typically found to sustain various prosocial and empathetic attitudes, thoughts, affects, and behaviors, in particular toward proximal and close people (for reviews: Saroglou, 2013; Shariff et al., 2015). Second, more specifically, religiosity and/or consideration of the relationship as "sacred" are positively associated with several—mostly self-reported—indicators of interpersonal quality in couples, and especially in married couples (Hernandez et al., 2014). Moreover, both theory (Kirkpatrick, 2005) and evidence (Granqvist, Mikulincer, & Shaver, 2010) attest that religion implies strong bonds of parent-child attachment; and religious socialization is bidirectionally linked with secure parent-child attachment. Thus, it is reasonable to expect that empathy- and care- oriented parental attachment to children is facilitated by empathy- and care-oriented intimate relationships between parents. Finally, several religions propose theological discourses that sacralize (marital) sexual relationships as referring to and a way to connect with God. Given that, at least in monotheistic traditions, God is typically perceived as disembodied, and that religiosity is associated with body-mind dualistic beliefs (Riekk, Lindeman, & Lipsanen, 2013; Willard & Norenzayan, 2013), religion may (over)emphasize the affective, loving, and spiritual bonds between partners, instead of considering the intimate relationship only in sexual and physical terms.

### **3. Experiment 1**

In this first experiment, conducted in Belgium and France, we investigated whether religious ideas, supraliminally primed, would enhance participants' construal of sexuality as romantic and not strictly sexual, by describing a personal past sexual experience in terms

reflecting interpersonal quality, bonding, and other-oriented interest rather than in purely physical, sexual, and self-interest-oriented terms.

We also evaluated the developed, detailed vs. succinct character of the described sexual experience. This was to control for the risk of a more general effect of religious priming in making people either more prolific to develop their sexual memories (by having religion implicitly increasing participants' conscientious and accuracy-related concerns) or less prolific, by having religion implicitly inhibiting sexual thoughts and affects.

In addition, the possible moderating role of personal religiousness and spirituality was investigated. Previous research suggests that the effects of religious priming hold more clearly for religious participants (Shariff et al., 2015). Finally, based on previous research suggesting the role of sex guilt (Woo et al., 2012; Wyatt & Dunn, 1991) and disgust/purity (Deak & Saroglou, 2015; Olatunji, 2008) in partly explaining the link between religion and restrictive sexuality, we examined, for exploratory reasons, whether sex guilt and disgust/purity could mediate the hypothesized effect of religious priming on increased romanticism in sexual experience.

### 3.1 Method

Participants were 78 adults of 17 to 55-yrs old ( $M = 24.54$ ,  $SD = 6.84$ ; 76% women) recruited on social networks. They were mostly from Belgium (53%) and France (37%), with the remaining participants coming from other French-speaking countries (10%). Participants self-identified as Catholic (34%), other Christian (7%), Muslim (5%), Buddhist (4%), atheist (30%), or agnostic (15%), and the remaining 5% did not mention any religious affiliation or conviction. Half of the participants reported being currently in relationship, with the other half reporting having had sexual experience/relationship in the past. Additional people who took part to the experiment but reported never to have had sexual intercourse ( $n = 20$ ) or didn't complete the key recall task ( $n = 27$ ; see below) were not retained for the analyses.

Participants were randomly assigned to either a religious priming ( $n = 38$ ) or a control condition ( $n = 40$ ) for a sentence unscrambling manipulation as in Shariff and Norenzayan (2007; French words). In both conditions, participants had to unscramble 10 five-word sentences, dropping an extraneous word from each of them to create a grammatically correct four-word sentence. For example, "dessert divine was fork the" could be unscrambled as "the dessert was divine". In the religious priming condition, five of the scrambled sentences contained a religious word, i.e. *faith*, *divine*, *sacred*, *God*, and *baptize*, and the other five contained only neutral words.

Afterwards, participants completed the 10-item Revised Mosher Sex-Guilt Scale (Janda & Bazemore, 2011; 7-point Likert scales) and then performed a word-stem completion task aiming to capture the accessibility of purity-related thoughts (Preston & Ritter, 2012). This task consisted in the conversion of five word-fragments into meaningful words that could be either cleaning-related or unrelated words. These fragments and words were (in French /English translation): \_OUCHE (*Douche*/Shower or *Couche*/Coat); \_AIN (*Bain*/Bath; *Pain*/Bread); \_A\_ER (*Laver*/Wash; *Saler*/Salt); \_\_SSIVE (*Lessive*/Detergent; *Massive*/Massive); and \_\_LAIS (*Balais*/Broom; *Palais*/Palace).

In the next step, participants were asked to recall a personal sexual experience and write a few sentences about it. Instructions were as follows: “*We would like you to recall a sexual experience. It is important that this experience is strong in your memory. Please, take a few moments to remember the experience, what happened, and how you felt. Describe this experience in about 10 lines in the space below, describing what happened, and how you felt.*” The content of each recall description was independently read and evaluated by two researchers blind to the condition, through 5-point Likert scales, on four aspects: (1) degree of sexual crudity, (2) affectivity, and (3) focus on the relationship, as well as (4) the level of detail of the description provided (respective inter-rater correlations: .58, .43, .69, .82). An exploratory factor analysis with Varimax rotation indicated the existence of two factors, with 49% of the total variance being explained. The first factor was composed by (low) crudity and high affectivity and relationship focus (loadings > .83), the combination of which we term *sexual romanticism*, i.e., the describing of a sexual experience that emphasizes interpersonal qualities and deemphasizes strictly sexual ones. The respective three scores were thus averaged to form a unique by participant score ( $\alpha = .83$ ). The fourth evaluated aspect, i.e. the degree of elaboration of sexual memories, constituted the second factor.

After the main section of the experiment, participants indicated their degree of *religiosity* through three items that measured the importance of God and the importance of religion in life, as well as the frequency of prayer, and also indicated in one item the importance of *spirituality* in their life. Participants did not differ in religiosity or spirituality between conditions.

### 3.2 Results

Two one-way ANOVAs tested the effect of condition on romanticism and degree of elaboration in the described sexual experience. As hypothesized, participants who were primed with religious words described their past sexual experience in more positive interpersonal than strictly sexual terms compared to those of the neutral priming condition (see Table 1 for descriptive statistics),  $F(1,75) = 6.46$ ,  $p = .013$ , 95% CI [-1.00, -0.12],  $\eta^2 = .08$ . This effect held when controlling for age, gender, and relationship status.

Table 1.

*Means and Standard Deviations of Aspects of Sexuality as a Function of Priming*

| Outcomes           | Religious Priming | Neutral Priming |
|--------------------|-------------------|-----------------|
| Study 1            |                   |                 |
| Romanticism in Sex | 3.10 (0.92)       | 2.54 (1.00)     |
| Study 2            |                   |                 |
| Romanticism in Sex | 3.01 (1.27)       | 3.16 (1.25)     |
| Sex for Bonding    | 5.72 (0.10)       | 5.28 (0.26)     |
| Sex for Pleasure   | 5.49 (1.15)       | 5.47 (1.03)     |

There was no difference between the religious and the neutral priming conditions on the degree of elaboration of the reported sexual experience, respective  $M_s = 1.88, 1.97$ ,  $SD_s = 1.18, 1.20$ . Religiosity or spirituality did not moderate the above effect,  $\beta = .09$ ,  $t(3,73) = 1.28$ , *ns*. Nevertheless, given the exploratory character of the study and the relatively low  $N$  (increasing thus the risk of Type II error), we provide for information the relevant figure (Figure 1-top) for the simple slope analysis, where it appears that the effect seems to have worked for those high (one SD above the mean) rather than not those low (one SD below the mean), in religiosity. Finally, sexual guilt and purity (in additional ANOVA analyses) were unaffected by the religious priming.

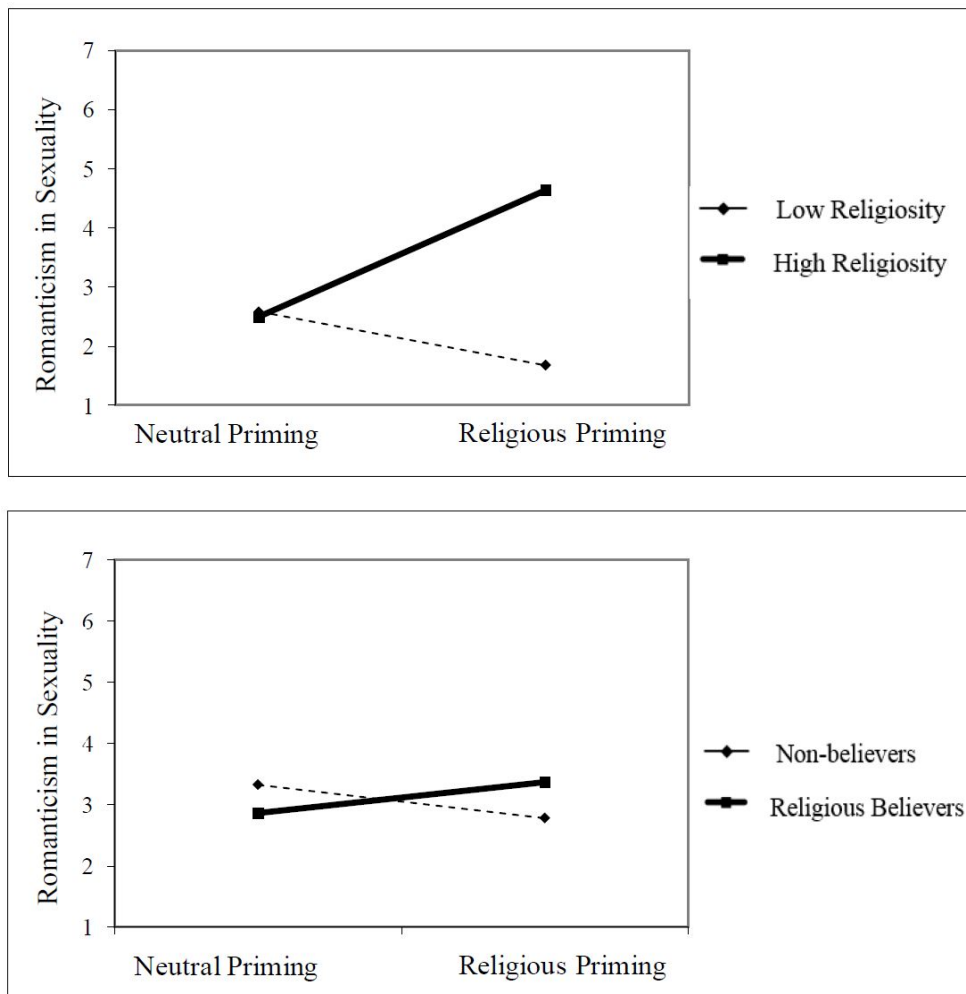


Figure 1. Personal religious belief (religiosity in Experiment 1 and religious self-identification in Experiment 2), as moderating the effect of religious priming on romanticism in describing a past personal sexual experience. Figure in the top is for Experiment 1 (Belgium and France); figure in the bottom is for Experiment 2 (US).

### 3.3 Discussion

The main findings were consistent with our hypothesis: participants perceived sexuality, at least in the way they described a past sexual experience, in more positive interpersonal, bonding, and loving and less explicitly and crudely sexual, physical, and self-interest-oriented terms. The level of detail of sexual descriptions was not impacted by the religious priming, which suggests that the main finding cannot be attributed to religion's possible effect in increasing or decreasing participants' willingness to describe personal sexual experiences. Moreover, the results were not affected by gender, age, relationship status, or personal religiosity. Nevertheless, men were underrepresented and the sample size was not high to detect possible moderating effects, especially if such effects were small. Thus, the present evidence should be considered as preliminary. Finally, sex guilt and purity were not impacted by religious priming. Participants may have been too secularized to report high sex guilt—mean scores on both sex guilt and religiosity were below the middle point; and the purity task may have not been optimal since the possibility to complete the word fragments with non-cleaning words was much higher than to do so with cleaning-related words.

## 4. Experiment 2

Experiment 2 aimed to replicate the religious priming effect on romanticism in sexual relationships found in Experiment 1 as well as to test for cross-cultural generalizability of the findings by investigating this question in another than the initial, of Catholic tradition, cultural context, i.e. an Anglo-Saxon country with predominantly Protestant tradition, the USA. Moreover, to also provide multi-method evidence, we additionally measured “romanticism vs. pure physical sexuality” by asking participants to provide their explicit evaluations of their sex motives, i.e. having sex for *pleasure* and having sex for *bonding*.

### 4.1 Method

Participants were 165 adults from 20 to 68-yrs old ( $M = 35.20$ ,  $SD = 10.75$ ; 57% men) recruited through the crowdsourcing platform Amazon Mechanical Turk. All the participants were resident in the USA (72% Caucasian, 10% Black/African, 9% Asian, 6% Hispanic/Latino, and the remaining 3% Arabic, Native American or mixed descent). The participants reporting being Protestant (27%), Catholic (23%), atheist (17%), agnostic (16%), spiritual but not religious (8%), Muslim (2%), Jew (1%), Buddhist (1%), Hindu (1%), and the remaining 4% did not mention any religious affiliation/conviction. (Unlike in Experiment 1, we did not include continuous measures of religiosity.) Seventy percent of the participants reported to currently have a relationship, 24% reported being single, and the remaining 6 % reported to be divorced or widowed. Additional nine participants who were outliers in the two sex motives measures (see below) were excluded from the analyses.

The priming procedure was a replication of Experiment 1 (but in English). The sample sizes in the religious and the control conditions were 87 and 78 respectively. After the priming manipulation, participants filled in two measures on 7-point Likert scales, taken from Meston and Buss's (2007) Why Have Sex? Scale: (1) three items measuring whether they usually have *sex for pleasure* (“I have had sex in the past because: I wanted the pure

pleasure; I wanted to achieve an orgasm; I was ‘horny’”;  $\alpha = .84$ ) and then (2) three additional items measuring whether they usually have *sex for bonding* (“I have had sex in the past because: I wanted to increase the emotional bond by having sex; I wanted to show my affection to the person; I wanted to feel connected to the person”;  $\alpha = .91$ ). Finally, participants were asked, as in Experiment 1, to remember a personal sexual experience and write a few sentences about it. As in Experiment 1, the descriptions were rated by two researchers blind to conditions on the three indicators of sexual romanticism (inter-relations between the two evaluators ranged from .47 to .76), and the final sexual romanticism score was computed by averaging the scores of the three indicators ( $\alpha = .84$ ).

## 4.2 Results

Sex motives for pleasure were unrelated to sex motives for bonding,  $r = .09$ ; however, the former was negatively related to sexual romanticism, as detected in the descriptions of a past sexual experience,  $r = -.22$ ,  $p = .004$ . Sex motives for bonding were unrelated to romanticism ( $r = .064$ , *ns*). Three one-way ANOVA analyses tested the effect of condition on romanticism in the reported sexual activity, as well as on motives to have sex for pleasure and to have sex for bonding. There was no main effect of priming condition on sexual romanticism and sex motives for pleasure (see Table 1 for descriptive statistics; respective  $F_{S(1,163)} = 0.527$  and  $0.028$ , *ns*). However, participants who were primed with religious words reported higher bonding motive scores, compared to those of the neutral condition,  $F_{(1,163)} = 7.60$ ,  $p = .007$ , 95% CI [0.13, 0.76],  $\eta^2 = .05$  (see Table 1 and Figure 2). This effect held even after controlling for age, gender, and relationship status.

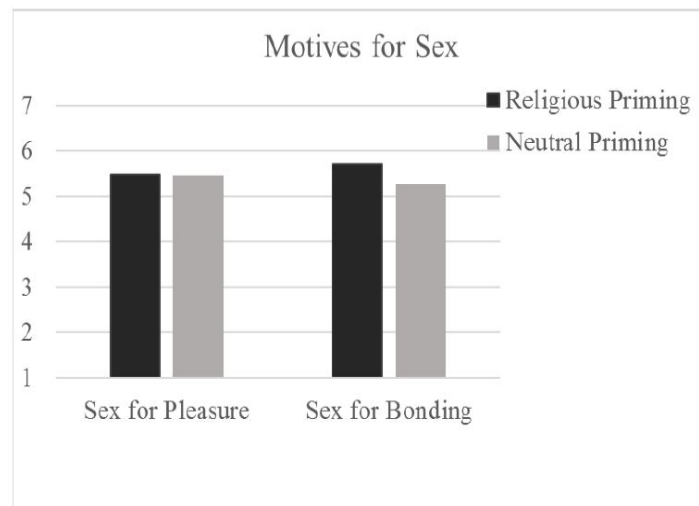


Figure 2. Mean scores of sex motives for pleasure and sex motives for bonding, as a function of religious, compared to a neutral priming (Experiment 2).

To examine the possible moderating role of religious belief, we conducted three multiple regression analyses, one for each of the dependent variables (sexual romanticism, sex for pleasure, sex for bonding). In each analysis, priming condition, personal belief

(being religious, affiliated, or spiritual vs. atheist, agnostic or “unaffiliated”), and the interaction between these two variables were entered as predictors. No interaction was found for the two sex motives. However, a significant interaction was found between condition and religious belief on sexual romanticism,  $b^* = .21$ ,  $t_{(3,154)} = 2.62$ ,  $p = .010$ ,  $R^2 = .05$ . A subsequent simple slope analysis (see Figure 1-bottom) showed that religious priming had no significant effect on romanticism in describing past sexual experiences among the religious believers,  $b^* = .16$ , *ns*, but diminished sexual romanticism among the non-religious,  $b^* = -.37$ ,  $p = .016$ .

### 4.3 Discussion

Experiment 2 did not directly replicate the main effect of religious priming on sexual romanticism in participants’ description of a past sexual experience. However, religious priming did *increase* participants’ interpersonal bonding motives for sex, whereas it did not decrease (did not “inhibit”) their sex motives for sexual pleasure. Moreover, the above main effect was again not moderated by gender, age, relationship status, or religiosity. Thus, Experiment 2 partly confirms Experiment 1. It cannot be excluded that responding to the questions relative to sex motives attenuated if not totally erased the effect of religious priming on the subsequent task of describing a sexual experience.

Nevertheless, surprisingly at a first glance, religious priming *decreased* romanticism in sexual memories among atheists and agnostics. If this finding is not by chance, it could suggest a contrast effect, with religious ideas making nonbelievers to react in opposition to religion-related ideals. In our understanding, this finding is not necessarily in contradiction with Experiment 1. Indeed, it is of interest to visually observe the similarity between the two studies in that the trends for the religious believers vs. nonbelievers (personal religiosity measure in Experiment 1; believer vs. nonbeliever status in Experiment 2) seem similarly divergent: the hypothesized effect of higher romanticism in sexual descriptions applies to the former but not the latter (see Figures 1-top and 1-bottom). If future research confirms this trend, this would be in line with the idea that priming effects are clearer when there is conceptual correspondence between concepts primed and people’s dispositions (here, personal religious belief).

## 5. General Discussion

Two experiments, in two Western cultural contexts of Catholic (Belgium and France) and predominantly Protestant (USA) tradition, provided initial, modest, though inconsistent across the measures used, evidence that subtle exposure to religious ideas lead people to emphasize an interpersonal bonding and loving dimension in sexual relationships and thus not see the latter as exclusively physical and sexual pleasure-oriented.

Possibly because of the modern, open to secularization, cultural context of the two studies, where sexuality is less restrictive, also among the religious, compared to other cultural contexts (Saroglou, 2018), religious priming did not have an “inhibitive” effect. It did not diminish neither the detailed character of the sexual descriptions (Experiments 1 and 2) nor the reported sex motives for sexual pleasure (Experiment 2).

The present evidence extends, theoretically and empirically, research on the role of religion as enhancing prosocial quality in interpersonal relations in general (Saroglou,

2013; Shariff et al., 2015) and as regulating and coloring human sexuality by orienting it toward lasting loving couple relationships (Hernandez et al., 2014). This may have constituted an additional mechanism explaining how, from an evolutionary perspective, religion has contributed to privilege intimate relationships that give priority to exclusiveness, marriage, and parental investment over short-term mating and permissive sexual relationships (Kirkpatrick, 2005; Weeden & Kurzban, 2013).

Nevertheless, the present exploratory studies present several limitations that should be addressed in further research. First, the main effect of Experiment 1 was not directly—i.e. with the same method—replicated in Experiment 2. It is unclear whether this was due to chance, sample differences, experimental procedure (other relevant measures were inserted after the priming) or cultural differences. Future research should clarify this issue. Furthermore, future research should also clarify the moderating role of personal religiosity. The current work presents some apparent inconsistency in this regard: religious belief significantly moderated the effect of religious priming in Experiment 2 (USA), but not in Experiment 1 (Belgium and France). Finally, our results suggest that religious ideas can affect people's retrospective and abstract attitudes toward sex, but this does not guarantee that religion affect sex motives in the moment. Future research should examine whether religious priming changes people's sexual aspirations, for instance by prioritizing loving and committed couple relationships over short-term sexual relationships.

In conclusion, the present work provides initial evidence that religious concepts automatically activate an associative link between sexuality and bonding and love. Particularly intriguing for future research is the question of whether religion's role in emphasizing bonding and love in intimate relationships is primarily to regulate and restrict sexual desire and pleasure or to solidify and boost them and increase sexual and thus relational satisfaction. The substantial previous evidence on the religion and socio-restrictive sexuality links (Li & Cohen, 2014; Schmitt & Fuller, 2015) renders the former possibility more plausible.



## Chapter 5

### **Make love and lose your religion and virtue: Recalling sexual experiences undermines spiritual intentions and moral behavior**

---

Reference:

Rigo, C., Uzarevic, F., & Saroglou, V. (2016). Make love and lose your religion and virtue: Recalling sexual experience undermines spiritual intentions and moral behavior. *Journal for the Scientific Study of Religion*, 55, 23-39.



## **1. Abstract**

In contrast with traditional considerations, sexuality is often perceived today as being rather compatible with religion/spirituality and morality. However, there may be some inherent opposition between (a) sexuality (thoughts, affects, and pleasure) and (b) religion/spirituality (attitudes, motives) and (interpersonal) morality (dispositions, behavior). The two imply, respectively, self-enhancement versus self-transcendence, disinhibition versus self-control, and disgust indifference versus sensitivity. We hypothesized that sexual experience attenuates spiritual and moral concerns and behaviors. In three online experiments, young adults were asked to recall a personal sexual experience. Compared to a control condition, sexual induction diminished spiritual behavioral intentions (Experiments 1 and 2), in particular among those with high individual disinhibition (Experiment 1), as well as behaviors of prosociality and integrity/honesty (Experiment 3). The effects were independent of individual religiousness/spirituality. These findings suggest that combining sexual pleasure with self-transcendence and moral perfection, even if a legitimate ideal, is not an easy enterprise.



## 2. Introduction

Sexuality is one of the oldest domains of the human animal's activities, certainly older than religion and systems of morality. Globally, sexuality, religion, and morality supposedly serve specific and distinct—even if sometimes overlapping—functions. Sexuality is primarily concerned with the search for sexual pleasure and reproduction, religion with connection with the divine and transcendence, and morality with containment of self-interests to the benefit of others' and society's well-being. However, traditionally, whereas religion and morality have been considered as being strongly intertwined, religion being a major source of moral norms in traditional societies, sexuality has been perceived as being in conflict with both religion and morality, and even as being, at least to some extent, immoral (Hunt & Yip, 2012; Thatcher, 2014). Sexuality has (stereo) typically been perceived as being part of what makes humans similar to other animals while religion and morality have (stereo) typically been considered a part of what makes humans distinct from other animals (Bain, Vaes, & Leyens, 2014; Demoulin, Saroglou, & Van Pachterbeke, 2008).

The conflict between sexuality, on the one hand, and religion and morality, on the other hand, is usually interpreted as reflecting concerns, motives, and values typical of traditional societies or conservative individuals. From this perspective, one role of religion and morality has been to regulate sexuality, or at least to control its excessiveness and negative effects (Hunt & Yip, 2012). Several underlying mechanisms have been proposed: traditional (religious) authorities' control of people's most intimate affairs (Freud, 1921); cultural restraint of sexuality's "destructive" power due to mate competition (Freud, 1927); hygienic concerns against sexually transmitted diseases in environments particularly vulnerable to such diseases (Fincher & Thornhill, 2012); and traditional societies' emphasis on values of purity, with regard to a sacred or natural order of things, and loyalty to family and the community, beyond values of interpersonal morality (Graham & Haidt, 2010).

In modern, mostly secularized, Western societies that promote autonomy and the search for happiness, sexuality is no longer considered intrinsically immoral. It is, on the contrary, valued and socially desirable (Lehmiller 2014). Similarly, today, the moral emphasis in these societies is on interpersonal care, social justice, and freedom, rather than purity, loyalty, and authority (Graham, Haidt, & Nosek, 2009). Accordingly, theological developments, at least in several Western Christian contexts, put moral concerns of sexuality in a secondary position today, and even adopt a discourse that values, to some extent, bodily expressions and sexual life (Hunt & Yip, 2012; Thatcher, 2015).

In this work, we first argue that the conflict of sexual experience with religious and moral inclinations may not be only historical and limited to traditional cultures and individuals preoccupied with purity rather than interpersonal morality. Instead, for several psychological reasons, there may exist some intrinsic contrast between sexual experience (thoughts, affects, and pleasure), on the one hand, and religion and morality (dispositions, behavior), including interpersonal morality, on the other hand. This may likely be the case even today, in modern secularized societies. Second, the above reasons may also indicate that there is not only an intuitive causal link from religion/morality to restricted sexuality (e.g., Hardy & Raffaelli, 2003), but also a less intuitive, yet equally plausible, causal link from sexuality to attenuated religion and morality. In other words, we argue that common sexual experience in general, not simply its excessiveness or high permissiveness, weakens,

to some extent, spiritual and moral dispositions and behavior. Below, we develop the rationale for these arguments and present three experiments that tested the subsequent hypotheses.

## **2.1 The inherent conflict of sexuality with spirituality and morality**

### **2.1.1 Self-Enhancement Versus Self-Transcendence**

A major characteristic of sexual experience is that it is primarily self-oriented or focused on a dyadic relationship with a partner. Most often, in sexual experiences, the individual is primarily in search of personal sensual satisfaction and pleasure and develops strategies to achieve these (Brotto & Smith, 2014). Importantly, satisfaction of one's own sexual desire and reaching orgasm require isolation from other concerns, no stress, and a narrowed attentional focus on bodily reactions and the relevant erotic stimuli (de Jong, 2009; Wiegel, Scepkowski, & Barlow, 2007). In addition to the pleasure, motives of sex are the search for resources, quest for social status, and a possible instrumental use of the other person (Meston & Buss, 2007). Even the search for love and commitment in sex has to be understood primarily within a dyadic relationship in separation from the external world. Note that self-oriented reasons to have sex are rated as highly important, particularly among men (Patrick, Maggs, & Abar, 2007) and young people (Leveque & Pedersen, 2012), who happen also to be less religious (Dillon, 2007; Francis & Penny, 2014). Finally, sexual fantasies and successful sexual experiences are related to heightened self-image, low humility, and even high narcissism, especially in the context of short-term mating (Baughman, Jonason, Veselka, & Vernon, 2014; Dufner, Rauthmann, Czarna, & Denissen, 2013; Lee, Ambler, & Sagarin, 2014).

This intense self-enhancing experience thus implies some retreat from the social world and distance from objectives other than sexual release and pleasure. Concerns for the welfare of others and the world, as well as existential questions regarding the meaning of the world and one's individual life, may appear irrelevant in that specific moment or at least be temporarily considered of secondary importance. Subsequently, sexual arousal and sexual experience should attenuate religious/spiritual and moral inclinations. The latter are characterized by feelings, beliefs, and behaviors denoting self-transcendence, with self-interests and self-focus in principle being reduced in favor of a broadened attention to and investment in others and the world as a whole (Graham & Haidt, 2010; Saroglou, Buxant, & Tilquin, 2008).

Regarding morality, indirect evidence in favor of the idea of sexuality's role in diminished moral and spiritual self-transcendence comes from research on values. Correlational studies show negative associations between hedonistic values and agreeableness, the prosocial personality trait (Oliver, Watson, Gannon, & Beech, 2008; Roccas, Sagiv, Schwartz, & Knafo, 2002). More importantly, many dozens of studies using Schwartz's (1992) model of values have confirmed, rather universally across the five continents, that hedonism, a value including sexual pleasure, is very proximal to values denoting self-enhancement (power and achievement) and autonomy (self-direction and stimulation) and at the opposite spectrum of values denoting self-transcendence (benevolence and universalism) (Schwartz, 1992, 2007). Regarding religion, correlational research shows that various aspects of religiousness are linked to restricted sexual attitudes,

feelings, and behavior with regard to a variety of indicators such as number of partners, frequency and variety of sexual acts, starting age, premarital relations, and sexual orientation (for reviews, see Hernandez et al., 2014; Li & Cohen, 2014).

### **2.1.2 Impulsivity Versus Self-Control**

Sensation seeking, in general, and disinhibition, in particular, are often helpful if not necessary to fuel sexual desire, sexual thoughts and fantasies, and sexual behavior (see, for longitudinal studies, (Khurana et al., 2012; Riggs et al., 2013). Alcohol and peer pressure are known to facilitate sexual experiences partly because they facilitate disinhibition (Dogan et al., 2010; Epstein et al., 2014). As based on an instinct, and because of its visceral facets, sexual experience is particularly sensitive to impulsivity. The link seems to be bidirectional with sexual desire increasing impulsivity (Loewenstein, 1996) and with the latter facilitating the satisfaction of the former (Hipwell, Keenan, Loeber, & Battista, 2010); including in rats, (Cummings, Clinton, Perry, Akil, & Becker, 2013), in particular in the case of risky sexual behavior (e.g., Macapagal, Janssen, Fridberg, Finn, & Heiman, 2011).

This impulsive dimension of sexual experience contrasts importantly with what is at the heart of religious and moral inclinations. The latter two share the importance of a moral muscle, i.e., the capacity for self-control and the ideal of self-mastery at both the cognitive and the emotional levels. Religious and moral lists of vices and virtues can be understood as having such a moral muscle as a common denominator (Baumeister & Exline, 1999). Recent experiments have shown that implicit activation of religious concepts decreases impulsivity (McCullough et al., 2012) and increases various aspects of self-control such as delayed gratification, resistance to temptations (including sexual ones), endurance of discomfort, and refraining from acting impulsively (Laurin et al., 2012; Rounding et al., 2012). Similarly, high impulsivity is a typical predictor of, and a common denominator underlying, all kinds of transgressive and immoral behavior (Sharma et al., 2014).

An additional argument can thus be included in favor of our hypothesis: sexual experience, as intrinsically related to some liberation from self-constraints, should attenuate religious/spiritual and moral aspirations and behaviors, which are primarily based on the awareness that life is at some point serious and needs self-constraint if it is to be virtuous.

### **2.1.3 Disgust Indifference Versus Sensitivity**

Playing with sexual thoughts, cultivating sexual fantasy, and performing sexual acts imply the capacity to turn down the relevance of thoughts and feelings of disgust (Stevenson, Case, & Oaten, 2011). Low disgust sensitivity is particularly relevant to sexual experience since all disgust components are potentially involved: animal reminder (death reminder and envelope violation), physical disgust of bodily products, and fears of contamination. Restricted versus unrestricted sexuality is related to feelings of guilt (Woo et al., 2012) and high disgust sensitivity (de Jong et al., 2013). Unconventional (e.g., homosexuality, sodomy) or abnormal (e.g., incest) sexual behaviors are often perceived as unnatural and provoke, particularly among conservatives, reactions of moral disgust (Cunningham et al., 2013; Terrizzi, Shook, & Ventis, 2010). Positive and successful sexual experiences thus imply the minimization of thoughts and feelings of disgust (de Jong et al., 2013; Lee et al., 2014).

On the contrary, religion and religious rituals, as well as morality, especially traditional morality, emphasize the importance of purity: the sacred and the natural order must be protected from impurity. High disgust sensitivity has been found to play a role with regard to religious negative attitudes against homosexuality (Olatunji, 2008), disrespect of eating norms (Wu, Yang, & Chiu, 2014), and deconsideration of religious outgroups and atheists (Ritter & Preston, 2011). Experimental evidence also shows that cleanliness increases religiousness and religious stimuli increase cleanliness (Preston & Ritter, 2012). Disgust is also important in the context of (nonsexual) morality since it fuels moral judgment and moral condemnation (Bieke & Olatunji, 2011; Chapman & Anderson, 2014; Eskine et al., 2011). It is thus reasonable to conceive that, overall, sexual performance and successful sexual experiences imply some minimization of disgust sensitivity, which, in turn, may put in parentheses one's purity-based motivations to endorse a religious/spiritual worldview and be morally alert.

## **2.2 Hypotheses and overview of the studies**

The aim of the present work was to experimentally test the hypotheses that sexual experience will diminish (1) religious/spiritual interests and (2) moral attitudes and behavior. The latter should concern both the interpersonal (prosociality) and impersonal (integrity/honesty) levels of morality. For obvious deontological reasons, we induced sexual thoughts and affects through recall of a previous sexual experience and did not provoke such an experience. Given our rationale in favor of some inherent psychological conflict between sexual experience and religious/moral inclinations, we expected the effects to hold even among participants of modest average religiosity living in Western secular societies that have experienced sexual liberation in previous decades. Note that we aimed to investigate an intriguing, less intuitive, causal direction, i.e., that going from sexuality to religion and morality, and not the reverse (moral norms and religion inhibit sexuality). There is some indirect evidence in favor of the hypothesized causal link. Sexual disinhibition in adolescence has been found to cross-sectionally predict religious doubt and apostasy (Saroglou, 2012). Furthermore, changes in moral personality traits (agreeableness and conscientiousness decrease in adolescence and increase in early adulthood) and the sensationseeking-relevant personality trait (openness to experience increases in adolescence and decreases in early adulthood) are followed by decreased versus increased religiosity in the respective ages (see Saroglou, 2012 for a review).

The present study primarily aims to test the existence of the hypothesized causal links as a first step before future studies can identify the explanatory mechanisms. Nevertheless, for exploratory reasons, three additional hypotheses were examined, two regarding possible moderators, and the third regarding a possible mediator. We hypothesized that the reduction of religious/spiritual and moral interests would be stronger for participants (1) low in religiosity/spirituality or (2) high in disinhibition. Highly religious or highly inhibited people may be less sensitive to the effects of (recalled) sexual experience on religiousness/spirituality and morality. Their spiritual and moral attitudes should be more stable and fixed, or their level of inhibition too high, to allow them to be easily disinhibited. Finally, given the rationale developed earlier, we hypothesized that (3) the effects of recalled sexual experience on reduced spiritual and moral dispositions can partly be explained by increased disinhibition.

We tested these hypotheses in three online experiments. In all three, participants were induced with personal (recalled) sexual thoughts and feelings. In Experiment 1, we investigated the effects of this induction on religious/spiritual behavioral intentions and tested the moderating role of individual disinhibition. In Experiment 2, we aimed to replicate Experiment 1 with an ethnically different sample and additionally examined increased disinhibition as a mediator of the sexuality low spirituality link. In Experiment 3, we investigated the effects of (recalled) sexual experience on prosociality (two indicators: spontaneous generosity and humanitarian donation intentions) and honesty. In all three experiments, religiosity/spirituality was included as a potential moderator.

### 3. Experiment 1

#### 3.1 Method

Participants were 122 adolescents and adults (ranging in age from 16 to 62 years,  $M = 25.06$ ,  $SD = 7.53$ ; 68.9 percent women) recruited on social networks and through emails via a snowball sampling technique starting with acquaintances of the first author. They were mostly from Belgium (91 percent), with the remaining participants coming from France (10) and Canada (1). Fifty-four percent reported currently being in a relationship; given the young age of participants and the fact that most young people (19–35 years old) in Belgium form couples or establish families without getting married (Deboosere, Marquet, & Moltemans, 2012), the key question participants were asked was whether they were currently in a relationship. In terms of religious affiliation/conviction, participants were mostly Catholics (43), atheists (49), and agnostics (17), and the remaining were Protestant (1) and Muslim (1), while 11 reported “other.”

Through the Internet survey, participants were randomly assigned to either a condition of induction of sexual thoughts and affects ( $N = 58$ ) or to a control condition ( $N = 64$ ). In the sex condition, participants were asked to recall a personal sexual experience and to write a few sentences about it. Instructions were as follows: “We would like you to recall a sexual experience. It is important that this experience is strong in your memory. Please take a few moments to remember the experience, what happened, and how you felt. Describe this experience in about 10 lines in the space below, describing what happened, and how you felt.” Instructions for the control were as follows: “We would like you to recall the last time you went to the movie theater. In about 10 lines describe the path you followed between the time you left your home and the moment you were seated in the movie theater.” Note that, in addition to the 122 participants, five other individuals completed the study but were not retained for analyses because they did not follow the instruction to describe a sexual experience or reported a nonsexual experience. The length of the descriptions provided conformed to the instructions and was similar between the two conditions, with the mean number of lines being 10 and 8.6, and the mean number of words being 722 and 615, in the sexual and control conditions, respectively.

Afterward, participants were requested to rate their willingness to undertake a trip to a series of six destinations (seven-point Likert scales from 1=not at all willing to 7=totally willing), three proximal (after having hypothetically won a hike), and three distal. The proximal destinations were (1) the Way of St. James of Compostela, (2) canyon of Verdon Gorge in France, and (3) a wine tasting tour in Bordeaux, France. The distal destinations

were (4) Tibet, (5) Kenya, and (6) Miami. The six destinations were selected after a pretest on a pool of 12 destinations (six for each group, proximal and distal) in order to have, by group, one destination that was “very spiritual” and two other “nonspiritual” destinations (seven-point Likert scale). The respective values of  $M$  on “spiritual” for destinations 1–3 were 6.35, 2.72, and 2.20,  $F(2,78) = 154.96$ ,  $p < .001$ , and for destinations 4–6, they were 6.63, 4.00, and 1.68,  $F(2,78) = 249.83$ ,  $p < .001$ . Paired comparisons confirmed the higher spiritual character of the two relevant destinations compared to all others (all values of  $p < .05$ ). Importantly, the six destinations were selected to be of mild, not extremely high or low, attractiveness, and were roughly similar in attractiveness (seven-point Likert scale;  $M$  for destinations 1–6 = 4.00, 5.55, 4.57, 4.68, 4.65, and 4.53). In an exploratory factor analysis of the data on the willingness to undertake a trip to the six destinations (principal component analysis with varimax rotation), three factors emerged, i.e., religious/spiritual (Way of St. James, Tibet), secular proximal (Verdon Gorge, wine tour in Bordeaux), and secular exotic (Kenya, Miami) destinations. The scores of the two items were thus averaged to compute three respective outcome variables. Interestingly, the spiritual destinations ( $r = .34$ ,  $p < .001$ ), but not the secular proximal or the secular exotic ones ( $r = -.02$ ,  $-.14$ , *n.s.*), were indeed related, across conditions, to individual religiosity/spirituality measured post-experimentally (see below). Previous research has also shown that the willingness to visit Tibet (but not other secular destinations) can be considered as a spiritual behavioral intention and is meaningfully affected, i.e., increases, among religious participants, after the induction of the emotion of awe (Van Cappellen & Saroglou, 2012).

Afterward, participants engaged in a distracting task (a seven-error discovery game) and subsequently completed measures of personal general religiosity (a three-item index measuring the importance of God and the importance of religion in life, as well as frequency of prayer;  $\alpha = .92$ ) and spirituality (one-item index of importance of spirituality in life) (seven-point Likert scales; see (Saroglou & Muñoz-García, 2008). Finally, they were administered the 10 items of the disinhibition subscale of the Sensation Seeking Scale (Zuckerman et al., 1978; forced-choice items).

### 3.2 Results

Three one-way ANOVA analyses testing for the effects of condition (sex induction vs. neutral) on each destination type (religious, secular proximal, and secular exotic) confirmed the hypothesis regarding the sexuality-religion/spirituality causal link (see also Figure 1). Participants who were aroused with sexual thoughts and feelings reported lower willingness to visit religious/spiritual destinations,  $M = 4.20$ ,  $SD = 1.53$ , compared to participants in the control condition,  $M = 4.80$ ,  $SD = 1.52$ ,  $F(1,120) = 4.55$ ,  $p = .03$ , 95 percent CI = [0.04, 1.14],  $\eta^2 = .04$ . On the contrary, there were no differences between the sexual induction and the control condition in willingness to undertake secular proximal (respective values of  $M = 5.16$ , 4.99;  $SD = 1.09$ , 1.32) and exotic (respective values of  $M = 5.28$ , 5.30;  $SD = 1.14$ , 1.44) trips,  $F(1,120) = 0.60$  and 0.01. Age, gender, and relationship status did not moderate the above results.

To test whether individual religiosity/spirituality or disinhibition could moderate the above main effect of condition on spiritual travel intentions (none of these variables was affected by condition), we performed one moderated multiple regression of the religious/spiritual behavioral intentions on condition, religiosity/spirituality (combined into

a global index of four items, to avoid the risks of multicollinearity), disinhibition, and the interactions of condition with the two latter variables. The regression confirmed the main effect of condition,  $\beta = -.15$ ,  $t(1,116) = -1.70$ ,  $p = .092$ , beyond the main effects of individual religiosity/spirituality,  $\beta = .24$ ,  $t(1,116) = 2.75$ ,  $p = .007$ , and disinhibition,  $\beta = -.14$ ,  $t(1,116) = -1.65$ ,  $p = .10$ , but also indicated a significant interaction between condition and disinhibition,  $\beta = -.26$ ,  $t(1,116) = -3.04$ ,  $p = .003$  ( $R^2 = .18$ ). A simple slope analysis (see also Figure 2) revealed that sex induction had no effect on religious/spiritual behavioral intentions among those low in disinhibition (one *SD* below the mean),  $\beta = .09$ , *n.s.*, but decreased these intentions among those high in disinhibition (one *SD* above the mean),  $\beta = .40$ ,  $p = .002$ .

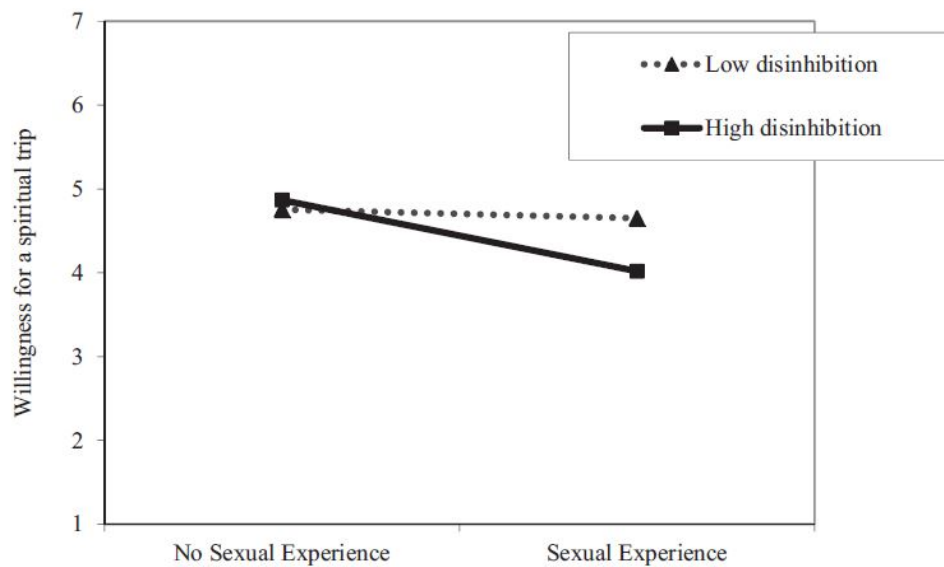


Figure 2. Individual disinhibition as moderating the effect of recalled sexual experience on spiritual intentions (Experiment 1)

### 3.3 Discussion

This experiment confirmed that sexual experience, even when not currently being undergone but simply remembered, decreases religious/spiritual aspirations. This was found with the latter being measured in a subtler way, i.e., as spiritual behavioral intentions mixed with other, secular, ones, than through self-reports of religiosity/spirituality that are known to be sensitive to social desirability bias (Sedikides & Gebauer 2010). This main effect could not be due to a general decrease in the propensity for any kind of activity, since the sexual induction did not decrease the willingness to undertake other kinds of similarly attractive nonspiritual trips.

Moreover, the effect was present mainly among participants high in individual disinhibition. Given that religion and self-control are intrinsically intertwined (McCullough & Carter, 2013; see also the negative association, across conditions, between disinhibition

and spiritual traveling in this experiment) and that the seriousness of human existence is at the heart of religion/spirituality (James, 1902; Saroglou, 2002), this finding suggests that sexual experience has some “liberating” effect, inducing some level of “carefreeness,” with regard to existential concerns, but not among those who are dispositionally highly inhibited. Finally, participants’ religiosity did not moderate the decrease of religious/spiritual intentions after induction of sexual memories, suggesting that the negative association in people’s minds between sexuality and religion may be shared among believers and nonbelievers. This is in line with other studies showing that religion is implicitly associated with several psychological constructs (e.g., prosociality) not only among believers but also among nonbelievers (Galen, 2012, for review).

## 4. Experiment 2

### 4.1 Method

Participants were 175 young adults and adults, ranging in age from 18 to 47 years ( $M = 23.41$ ,  $SD = 3.60$ ; 62.9 percent women), recruited on social networks and through emails via a snowball sampling technique starting with acquaintances of the second author. The majority of participants came from Croatia (70 percent), and the remaining from various other Western countries. Participants were mostly Catholic (62), atheist (43), and agnostic (38), whereas the remaining participants belonged to other Christian denominations (9) or reported Buddhism (2) or simply “other” (21); 49 percent reported currently being in a relationship. They were randomly assigned to either a sexual induction condition ( $N = 84$ ) or to a control condition ( $N = 91$ ), with the same instructions as in Experiment 1. Note that in addition to the 175 participants, 19 other individuals completed the survey but were not retained for analyses because they did not follow the instruction to describe a sexual experience or because they reported a nonsexual experience. Afterward, participants completed the disinhibition subscale as in Experiment 1, now as a hypothesized mediator, and were requested, as in Experiment 1, to report their willingness to undertake a trip to the following destinations: Tibet, Kenya, and Miami, i.e., the three distant destinations of Experiment 1 (seven-point Likert scales). Then, after a distracting task similar to Experiment 1, participants were provided with the indexes of religiosity and spirituality as in Experiment 1.

### 4.2 Results

Three one-way ANOVA analyses of the effect of condition (sex induction versus neutral) on each respective destination type (Tibet, Kenya, and Miami) confirmed the hypothesis of the sexuality-religion/spirituality causal link (see also Figure 1). Participants who were induced with sexual thoughts and feelings reported lower willingness to visit Tibet,  $M = 5.10$ ,  $SD = 1.99$ , compared to participants of the control condition,  $M = 5.73$ ,  $SD = 1.43$ ,  $F(1,173) = 5.87$ ,  $p = .016$ , 95 percent CI = [0.12, 1.14],  $\eta^2 = .03$ . On the contrary, there were no differences between the sex induction and the control condition on willingness to undertake a trip to Kenya (respectively,  $M = 4.92$ , 5.12;  $SD = 1.79$ , 1.63) and Miami (respectively,  $M = 5.01$ , 4.80;  $SD = 1.87$ , 1.70),  $F(1,173) = 0.63$  and 0.61. Age, gender, and relationship status had no impact on the willingness to visit Tibet and did not moderate the effect of sexual induction on the willingness to visit Tibet.

A moderated multiple regression of disinhibition on condition, age, gender, and the interactions of the two later variables with condition suggested no main effect of condition, but a marginally significant interaction between condition and gender,  $\beta = .14$ ,  $p = .076$ . In fact, among women, but not men, sex induction increased disinhibition in comparison to the control condition (respectively,  $M = 3.94, 3.55$ ;  $SD = 0.91, 0.92$ ),  $t(1,108) = 2.24$ ,  $p = .027$ . However, disinhibition was unrelated to willingness to visit Tibet, and thus the conditions were not present to test for mediation by disinhibition of the sexuality-spirituality intentions link.

Finally, individual religiosity and spirituality, which were unaffected by condition, were overall negatively related to disinhibition ( $-.32$ ,  $p < .001$ ;  $-.23$ ,  $p = .003$ ); and spirituality was related to willingness to visit Tibet ( $.22$ ,  $p = .004$ ). However, no significant interactions were found between these constructs and condition in predicting the willingness to visit Tibet.

### 4.3 Discussion

Experiment 2 nicely replicated Experiment 1. In an ethnically different sample, induction (reminder) of sexual thoughts and affects decreased spiritual aspirations. The latter was again assessed in a subtle way, i.e., through the willingness to visit a spiritual destination—a behavioral intention related to self-reported individual spirituality across conditions. Again, the effect was not due to a general decrease of activity since the willingness to visit other, nonspiritual, distant/exotic destinations was not affected. Moreover, the effect was again not affected by age, gender, or individual religiosity/spirituality. Finally, sexual induction also increased disinhibition, as hypothesized. However, this effect was present only among women (men are generally highly sexually disinhibited; Imhoff & Schmidt, 2014) and failed to mediate the effect of sexual induction on decreased spiritual interests, thus leaving the investigation of the underlying psychological processes open for future research.

## 5. Experiment 3

### 5.1 Method

Participants were 158 young adults and adults (age: from 16 to 46 years,  $M = 24.33$ ,  $SD = 4.44$ ; 63.3 percent women) recruited on social networks and through emails via a snowball sampling technique starting with acquaintances of the second author. The majority came from Croatia (82 percent), and the remaining from various other Western countries. Participants were mostly Catholic (75), atheist (22), and agnostic (40), whereas the remaining participants were Buddhist (1), Muslim (2), other Christian (7), or reported “other” (11); 47 percent reported currently being in a relationship. Participants were randomly assigned to either a sexual induction condition ( $N=75$ ) or to a control condition ( $N=83$ ), with the same instructions as in Experiment 1. Note that in addition to the 158 participants, eight other individuals completed the survey but were not retained for analyses due to the fact that they did not follow the instruction to describe a sexual experience or because they reported a nonsexual experience.

## 5.2 Measures

Three indicators of prosocial and moral behavior were used afterward to tap (1) spontaneous generosity in sharing hypothetical gains with others, (2) willingness to donate for a humanitarian project, and (3) honesty. More precisely, after writing about the sexual versus neutral experience, participants were told first to imagine that they had won 100,000 euros in a lottery. They were asked to report how they would spend this amount of money, specifying the percentage corresponding to each of the expenditures. The percentage that was spontaneously allocated to others (e.g., friends, family, charity, and foundations) and not to oneself was coded as a measure of spontaneous generosity. This measure has effectively been used in previous research with spontaneous generosity being positively affected by religious primes and being positively associated with religiosity (Clobert & Saroglou, 2013; Van Cappellen, Saroglou, & Toth-Gauthier, 2016).

Second, participants were told that a humanitarian project for homeless people was related to the study and that they were free to participate or not. In case they decided to participate, the survey would take a little bit longer, but a certain amount of money would be donated to the organization, depending on the option they chose (forced-choice measure). Three choices were provided: (1) “I want to see the whole presentation (the survey will last for 12 more minutes and 3 euros will be donated to the project)”; (2) “I want to see only the essential part of the presentation (the survey will last for 9 more minutes and 1.5 euro will be donated to the project)”; and (3) “I don’t want to participate in the project (the survey will last for 6 more minutes and no money will be donated to the project).” This was coded as a continuous variable, with options 1–3 reversely coded as 3 (prosocial) to 1 (no prosocial).

Third, we measured cheating versus honesty by adapting a task created by Wiltermuth (2011), based on Cameron and Miller (2009). Participants were presented nine word jumbles and were told that those most successful in solving the word jumbles would be given a reward. The time to find words was limited to 2 minutes. Importantly, participants were told that they were not allowed to go to the next word jumble until the previous one had been solved. After 2 minutes had passed, participants had to report how many word jumbles they had solved (a scale from 0 to 9 jumbles). However, the third word jumble was impossible to solve (Wiltermuth, 2011). Under the above-described constraints, it was impossible for participants to honestly claim that they had solved more than two word jumbles. So, participants who claimed to have solved 0–2 word jumbles were considered noncheaters and their answer was coded as 1. Participants who reported solving 3–9 word jumbles were considered cheaters; the higher of jumbles claimed to be solved, the higher the score of cheating that was attributed (from 2 to 8).

At the end of the experiment, after a distracting task consisting of counting the number of squares in a square puzzle game, participants were administered the subscale of disinhibition and the indexes of religiosity and spirituality, as in Experiments 1 and 2.

## 5.3 Results

Three one-way ANOVAs for the three dependent variables confirmed the hypotheses in two out of the three measures (see also Figure 1). Participants who recalled a personal sexual experience spontaneously shared less of their hypothetical gains with

others, thus keeping more the money for themselves,  $M = 12.99$ ,  $SD = 20.51$ , compared with participants who recalled their way to the movie theater,  $M = 20.77$ ,  $SD = 24.71$ ,  $F(1,147) = 4.30$ ,  $p = .040$ , 95 percent CI = [0.36, 15.18],  $\eta^2 = .03$  (nine participants did not provide percentages of expenditures). Moreover, the participants in the sex condition cheated more by providing more words after transgressing the dishonesty “barrier,”  $M = 2.56$ ,  $SD = 1.92$ , compared to those in the control condition,  $M = 2.04$ ,  $SD = 1.39$ ,  $F(1,156) = 3.91$ ,  $p = .050$ , 95 percent CI = [-1.05, -0.01],  $\eta^2 = .02$ . These two effects were not affected by relationship status. There was no difference in the willingness to donate to the humanitarian project ( $M$  for sexual and control conditions = 1.52 and 1.58;  $SD = 0.79$  and 0.83),  $F(1,156) = 0.20$ , *n.s.* This null effect may be due to the limited variation in this measure; participants who reported willingness to highly or modestly contribute were, respectively, 103 and 23, with only 32 participants being unwilling to contribute.

To check for possible moderators, we entered spontaneous generosity as the dependent variable in a moderated multiple regression with the following predictors: condition, the four potential moderators (age, gender, disinhibition, and religiosity-spirituality combined into one index), and the interactions of the latter with condition. The main effect of condition was confirmed,  $\beta = -.14$ ,  $p = .097$ , beyond that of religiosity/spirituality,  $\beta = .18$ ,  $p = .052$ , and the age  $\times$  condition interaction also turned out to be significant,  $\beta = .19$ ,  $p = .02$  ( $R^2 = .14$ ). Subsequent simple slope analyses showed that sexual thoughts and affects decreased prosociality among the very young adults (one  $SD$  below the mean),  $\beta = -.37$ ,  $p = .002$ , but not among the relatively older adults (one  $SD$  above the mean),  $\beta = .06$ , *n.s.* A second moderated multiple regression with the same predicting variables and cheating behavior as the outcome showed main effects of condition, age, gender (men coded higher), and religiosity/spirituality ( $\beta$ s = .21,  $p = .009$ ; -.22,  $p = .006$ ; .16,  $p = .051$ ; and .24,  $p = .008$ ), but also an interaction between gender and condition,  $\beta = -.18$ ,  $p = .027$  ( $R^2 = .15$ ). Subsequent comparisons, distinct by gender, showed that the increase of the cheating behavior after sex induction, compared to the control condition, was present among men (respectively,  $M = 3.06$ , 2.04,  $SD = 2.31$ , 1.50),  $t(1,56) = 2.03$ ,  $p = .047$ ,  $\eta^2 = .06$ , but not women,  $t(1,98) = .58$ , *n.s.*

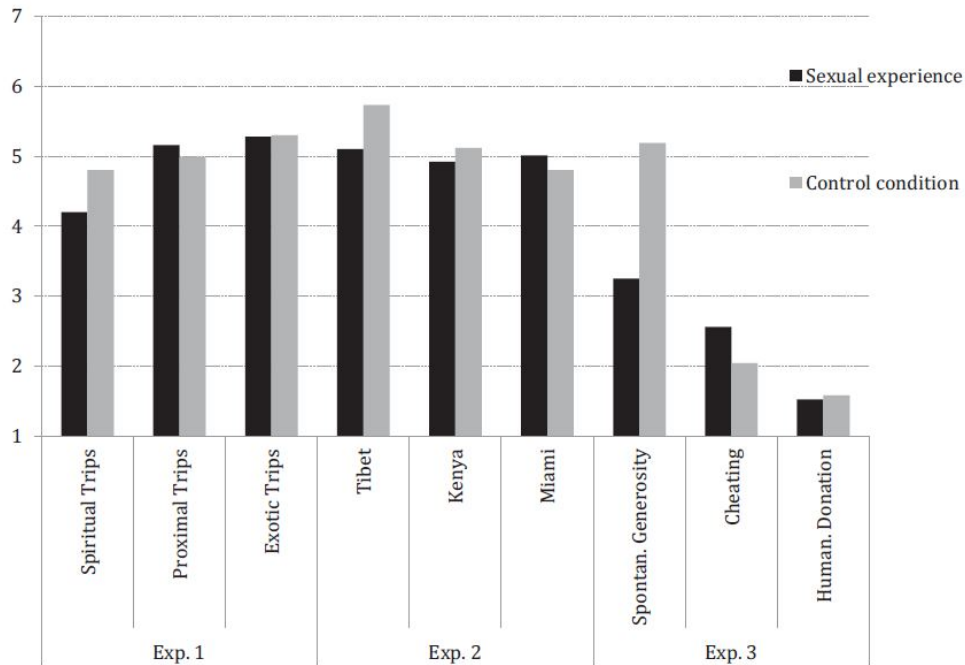


Figure 1. Effects of recalled sexual experience on intentions for spiritual versus secular activities (trips; Experiments 1 and 2), prosociality, and honesty (Experiment 3)

*Note:* Bars indicate the mean scores of all dependent variables for each experiment. Means for spontaneous generosity (Experiment 3) were divided by 4 to fit with the scale of the other variables.

## 5.4 Discussion

Experiment 3 importantly extended the findings of Experiments 1 and 2. Sexual thoughts and affects not only diminish active interest in the existential and spiritual/religious domain, which in a way could be more easily understood given some traditional conflict between religion/spirituality and sexuality, they also lessen concerns for others and for the common goal, i.e., care-based, prosocial, and integrity-based, honest, moral behaviors. These findings are particularly interesting given that in contemporary Western societies, sexuality, even if dissociated from marriage and parenting, is explicitly considered as not incompatible with (interpersonal) morality (Halwani, 2007). However, the present findings suggest that sexual thoughts and affects, possibly due to some release of self-control (see modest evidence on disinhibition's role in Experiments 1 and 2), decrease morality, and do so even at the interpersonal level. Moreover, given that the effects found here concerned moral behavioral intentions and not simply the accessibility of concepts of (im)morality as a function of sexual induction, one may anticipate that the

underlying psychological processes may be much deeper than a simple activation of history- or socialization based associations between sexuality and immorality<sup>1</sup>.

Consistent with Experiments 1 and 2, the effects of sexuality on morality were independent from participants' religiosity. Moreover, disinhibition failed to play a moderating role on decreased morality, although, regarding decreased spiritual intentions, this was the case in Experiment 1. Nevertheless, after sexual induction, the decrease of prosocial behavior was stronger for younger participants and the increase of dishonesty was stronger for men, favoring the idea that a release of self-control, increase of impulsivity, or increase of self-focused motives (typically higher among young people and/or men: Cross, Copping, & Campbell, 2011; Leveque & Pedersen, 2012; Patrick et al., 2007) may be responsible for the main effects. Finally, the hypothesized effect was found when measuring spontaneous generosity, i.e., keeping hypothetical gains more for oneself after recalled sexual experience, but not when measuring intentions for time donation for humanitarian purposes, possibly because the additional minutes to dedicate in the study were not significant enough to provoke sufficient variation in participants' responses.

## 6. General discussion

Across three online experiments, as hypothesized, the induction of personal sexual thoughts and affects (memories) was found to diminish spiritual behavioral intentions (Experiment 1 and cross-cultural replication in Experiment 2) and decrease moral behavior, both interpersonal, i.e., prosociality, and impersonal, i.e., integrity/honesty (Experiment 3). As theorized in the introduction, these effects could be explained by the fact that sexual experience constitutes a self-enhancing experience that implies attenuation of self-control, disinhibition of self-constraints, and low disgust sensitivity. Each of these factors presumably undermines, to some extent, religious/spiritual and moral aspirations and intentions, which are typically based on the search for self-transcendence, a diminishment of self-interest in favor of the welfare of others and society, cognitive and emotional self-control, and moral seriousness fueled by disgust sensitivity.

The hypothesized role of disinhibition with regard to the sexuality-decreased spirituality link received only partial and inconsistent confirmation. Indeed, in Experiment 1, sexual recalling diminished spiritual interests only among participants high in disinhibition, very likely because those low in disinhibition were too inhibited to "benefit" from the self-liberating power of sexual thoughts and affects. However, in Experiment 2, the same effect was found for participants both high and low in disinhibition. Moreover, in Experiment 2, the induction of sexual memories increased, as hypothesized, participants'—albeit only women's—disinhibition, but the latter did not significantly decrease spirituality, thus failing to be confirmed as a mediator. It may be that the simple recall of sexual

---

<sup>1</sup> A slightly stricter interpretation of the results on the honesty-cheating measure could be that recalled sexual experiences simply released self-control and thus increased a tendency to not pay attention to the instructions to not go to the next word jumble until the previous one had been solved. Thus, participants might not have cheated intentionally, in search of clear individual benefits. Nevertheless, this still constituted a moral transgression, and the task used here was adapted from past research aiming to measure cheating.

experiences did not provide a strong enough sexual arousal to substantially increase disinhibition or mobilize relevant individual differences, compared, for instance, to what may have been the case if people had engaged in real sexual experiences. Future research should involve alternative ways of introducing sexual stimulation in the lab, in relation to religion/spirituality, for instance, by asking people to observe erotic pictures (Rigo & Saroglou, 2013).

Individual religiousness/spirituality did not moderate the effects of sexuality on spirituality and morality. This may be due to the modest average religiousness of the rather young and secularized samples of the three experiments, a fact that possibly limited the variation on religiousness. Alternatively, it cannot be excluded that both believers and nonbelievers are affected—their strong or weak spiritual and moral concerns decrease—when occupied with sexual thoughts and affects. Religious believers and spiritual people may also have their moments of attenuation of spiritual concerns and moral rigorosity. Note also that, as recent research indicates, individual religiousness and spirituality are not strongly fixed and stable: they are sensitive to daily experiences and mood as well as to a few minutes of emotional induction in the laboratory (Kashdan & Nezlek, 2012; Saroglou, et al., 2008).

The results of the present studies may be particularly significant for understanding the “conflict” between sexuality and social order, in particular religious and moral order, as it is probably, to some extent, an intrinsic conflict and not only historical, traditional, and confined to conservative contexts. For several psychological reasons, this “conflict” seems to be present even today in Western secularized societies and among young people of modest average religiosity. In particular, the results concerning diminished prosociality after recalling a personal sexual experience indicate that sexual pleasure and satisfaction may involve a self-centered dimension that prevents people from being fully open to the world and caring for the needs and well-being of many others. The opposition between hedonistic motives and prosocial concerns thus may not be a residual of old-style traditional morality but may point to the very nature of sexuality as a self-enhancing experience, even within a dyadic relationship. With regard to this point, it is important to note that the sexual experiences described by the participants in the three experiments were mostly positive, not extravagant, and included an intimate partner. In other words, the present data give us no reason to suspect that negative or uncommon sexual experiences decrease spiritual and moral interests, whereas positive and normative ones do the opposite.<sup>2</sup>

---

<sup>2</sup> A content analysis of the written descriptions of the sexual experiences showed that a small minority of participants in each study described a negative or a mixed (of positive and negative elements), instead of a positive, sexual experience. The *N*s were small (for studies 1–3: 12, 23, and 26, respectively) and there was no strong distinction between positive and negative experiences in the control condition. Therefore, we could not include the emotional valence as a covariate or a main factor in the regression analyses. For exploratory reasons, we computed the main analyses only for participants who reported positive sexual experiences in each experiment. In Experiments 1 and 2, the main effects became stronger: willingness to undertake a spiritual trip was lower after sexual induction compared to the control condition,  $F(1,110) = 6.38, p = .013$ , 95 percent CI = [0.16, 1.36],  $\eta^2 = .06$  (Experiment 1), and  $F(1,152) = 7.98, p = .005$ , 95 percent CI = [0.24, 1.37],  $\eta^2 = .05$  (Experiment 2). In Experiment 3, the effects of sexual induction on morality were no longer significant.

Nevertheless, the present findings should not be interpreted as indicating a black-and-white opposition between sexuality, on the one hand, and spiritual and moral self-transcendence on the other. First, the effects were very modest in size, suggesting a slight attenuation but certainly not a disappearance of spiritual aspirations and moral attitudes following the induction of sexual thoughts and affects. Second, for many people, sexuality is, to some extent, a self-transcending experience (Wade, 2013). It allows, at least in terms of their beliefs and self-perceptions, an important shift from his/her own strict individuality and self-sufficiency to an openness to a significant other, with implications for cognitive, emotional, social, and moral broadening of the individual perspective through partnership. Moreover, in some contexts, and under some conditions, individuals have experienced or experience sexuality as a way to connect with the sacred and the world (Hernandez, et al., 2014). Experimental, noncorrelational, evidence in favor of this idea would be welcome. Finally, some specific situations such as mate competition may lead to increased religiousness, at least in cultural contexts that value religion (Li et al., 2010). In these contexts, increased religiousness may serve as a signal of fertility and quality in future offspring care.

The present work also presents some limitations. Participants were mostly young and lived in European countries of Catholic tradition. It is unclear whether the results are necessarily generalizable to other ages, and to other cultural and religious contexts. Sexuality among young people is certainly different from later stages of adulthood including sexuality within marital relationships (Schwartz, Diefendorf, & McGlynn-Wright, 2014), a fact that likely implies different methods of conciliation with religious and moral concerns. Also, Catholicism is believed to be historically more heavily marked by the notion of sexual guilt, at least in comparison to mainstream Judaism and Islam, as well as modern Protestantism (Sheldon, 2006). Moreover, the indicators of religious/spiritual and moral inclinations used here, although conceptually pertinent and mostly successful in confirming the hypotheses, do not cover the entire spectrum of the respective constructs. They also were indicators of behavioral intentions rather than measures of real behaviors in real life. Finally, the three samples may have been restricted in some way: the 10–12 percent of participants who were, in each study, unwilling or unable to report a personal sexual experience and thus not retained for analyses may have been individuals particularly low in disinhibition or high in religiousness, conservatism, and/or sensitivity to disgust. It is thus important to take all these limitations into account before quickly jumping to a generalization of the present findings to “sexuality,” “religion/spirituality,” and “morality” in general.

Beyond these limitations, the present work sheds new light on the psychology of sexuality and its connection with two fundamental domains of human activities, spirituality, and morality. It suggests that, at least to some extent, combining sexual pleasure with self-transcendence and moral perfection, even if a legitimate ideal, is not an easy enterprise.



## **Conclusion PART II**

---

The results highlighted in this second part highlight the bi-directionality of the religion-sexuality link. Indeed, in the study presented in Appendix 1, at the explicit level, religiously primed participants (vs. neutral) judged erotic pictures more negatively; this was true for both believers and non-believers. At the implicit level, non-believing participants in the religious priming condition watched less erotic pictures than dressed pictures, but this effect is not observed for believers. These results suggest that religious priming has an influence on sexuality, and that it can operate differently at the implicit and the explicit levels for believers and non-believers.

In Chapter 4, we also investigated the religion-sexuality direction and the results of the first study showed that participants exposed to the religious priming reported their past sexual experience tinged with more romanticism compared to participants in the control condition. No effect of the condition on the degree of elaboration was found, but it seems that participants enhanced their past sexual experience. This first study suggests that some conflict between (non-romantic) sexuality and religion does not only exist at the explicit level (e.g., because of teachings and socialization) but also exists at the implicit level of cognition. Moreover, this effect found among overall rather low in religiosity young Western secularized adults suggests that for non-believers too religion may exert some--inhibitive or transformative--influence on sexuality. In the second study, the same effects were not found. This point will be discussed further in the general discussion of the thesis. Nevertheless, the second study emphasize the importance of the bonding part of the sexual experience while religion concepts are activated.

Finally, in Chapter 5, induction of sexual thoughts and affects made participants to rate the spiritual destinations as less desirable comparatively to the neutral condition. This induction did not affect endorsement of the neutral or the hedonistic destinations. Moreover, participants scoring high in disinhibition were more affected by the induction of sexual thoughts and affects. These results suggest that the links between religion and sexuality may be psychologically deeper than it is usually thought (as if restricted sexuality simply results from some conservative religious socialization). They point out to some possible compensatory mechanisms with religion/spirituality being less necessary when self-enhancement needs are satisfied.

Taken all together, the results presented in this second part are in favor of reciprocal influences between religion and sexuality. This is of importance because, to our knowledge, very few studies consider the potential that sexuality also influences religion. Understanding this relationship as a causal loop could provide new information on the inhibitory roles that these two realities maintain.



## **General Discussion**

---



## 1. Synthesis and discussion of the main results

Throughout this thesis, we have attempted to enrich the existing literature on the direction, functioning and extent of the complex relationship between religion and sexuality with both theoretical and empirical approach. Generally speaking, the negative link that has been highlighted in the existing literature is also found in the studies conducted in this work. In this section, we will discuss the results raised in the empirical part according to three axes that can shed new light on this conflictual relationship, focusing first of all on the causal direction that unites the concepts of religion and sexuality. Then, we will discuss the results that could explain the functioning of this relationship and we will finally try to measure its extent. We will also examine the limitations of our studies and consider possible perspectives and implications of our work.

### 1.1 Understanding the causal direction

A first particularity of this thesis was to focus on the link between religion and sexuality, considering that it could be bidirectional. Indeed, as raised in the theoretical part of this work, very little research has been interested in the reciprocal influences that these realities can have on each other. To address this limitation, we conducted several experimental studies, which were presented in Chapters 4 and 5. Beyond the results presented in the empirical part of this thesis, the results from an additional study (see appendix 1) as well as complementary analyses to those presented in Chapter 2, which also make it possible to provide possible answers concerning the causal direction, will be presented and discussed.

The first direction considered, and in our opinion the more intuitive, is the *influence that religion has on sexuality*. In Chapter 4, we did consider the extent to which (explicit) religious priming will influence how individuals recall a past sexual experience. This approach has allowed us to show that religion does have an impact on sexuality, at least on how people remember and describe their sexual activities. Exploring this causal direction was also the focus of a study that we conducted, but which is not included in the empirical part of this thesis (see Appendix 1). The results also indicate an effect of religious priming on the negative judgment of erotic photos (i.e. finding the photos pornographic and shocking). A final indication that there is a causal link from religion to sexuality comes from further analysis of the data in Chapter 2. In this chapter, we did propose a model predicting inhibition of sexual behavior by religiosity. In order to test this, we presented the participants with questionnaires in the following order: religiosity - mediators - sexual behavior. In order to verify that the order of the questions presented is important, we tested an alternative model in which we entered sexual behaviors as independent variables and religiosity as dependent variables. The results indicate that the fit of this alternative model is not good  $\chi^2(9) = 97.72, p = .000, NFI = .81, CFI = .81$ , et  $RMSEA = .189$ , with 90% CI = [0.16, 0.22]. We can therefore assume an impact of presentation of the order of questions, religiosity influencing mediators who in turn impact sexual behaviors.

These studies confirm that there is indeed an influence of religion on sexuality, in line with what is usually assumed in the literature. Hardy and Raffaelli (2003) and Meier (2003) in particular have shown that religiosity delays the onset of first sexual intercourse among adolescents. In our view, this causal direction is the most logical and probably the strongest, given the religious socialization that takes place from an early age. However,

while causality from religion to sexuality may seem the most relevant, under certain conditions *sexuality may also impact religion*. As advanced in the theoretical part of this thesis, this hypothesis comes, among others, from the opposition between the value of Hedonism (linked to sexuality) and the values of Conformity and Tradition (associated with religion). Through two studies presented in Chapter 5, we were able to establish that sexuality could indeed impact the attractiveness of religion, and that therefore, the bidirectionality of these two realities had to be considered. The fact that sexuality may impact religious/spiritual aspirations could be explained by the antagonistic effects sought. Indeed, whereas sexuality centres the individual on himself and his partner (Lawrance & Byers, 1995), religion aims rather to focus the individual on social aspects, such as benevolence or prosociality (Galen, 2012; Shariff et al., 2015; Van Cappellen, Saroglou, et al., 2016). The third study in Chapter 5 supports this idea, highlighting the fact that morality can suffer from a focus on sexuality. Sexual activity, and even the mere thought of it, would thus cause the individual to withdraw from the social system in which he evolves and focus it on more personal and physical aspirations.

Through six experimental studies we have thus put the emphasis on a mutual association between religion and sexuality. This reciprocity has not always been sustained (Hardy & Raffaelli, 2003), which could be due to various factors. First of all, these authors were interested in the occurrence of the first sexual intercourse, which refers to a very specific sexual behavior that occurs only at a given moment. The influence of sexuality on religion may be only temporary (when the individual is focused on him/her or his/her partner) or may come from repeated sexual activity. Other studies can attest to a change in sexual attitudes due to active sexuality, a phenomenon at least observed among women (Diekmann & Eagly, 2000; Luquis et al., 2011; Twenge, 1997), which is consistent with what we found in our studies. However, we do not exclude the fact that the direction often assumed in the literature, namely from religion to sexuality, is perhaps stronger and more appropriate to take into account in many cases. However, ignoring the possibility of reciprocal influence, beyond representing bias in the development of research hypotheses, may also lead to a less complete understanding of the association between religion and sexuality.

## **1.2 Understanding the functioning**

Much of this thesis has focused on the potential mechanisms that may explain this complex link between religion and sexuality. If some studies have already proposed guilt as a mediator (Gunderson & McCary, 1979; Woo et al., 2012), disinhibition, disgust, as well as the search for pleasure or fantasies have, to our knowledge, never been taken into account to explain this tension between religion and sexuality. Moreover, the fact of putting these mediators in competition in order to test their respective weight in this link is original. In this section, we will first discuss the results obtained in the empirical part for each of the proposed separate mechanisms before discussing the roles of these mechanisms in an integrative manner.

### **1.2.1 Moral emotions**

The first moral emotion that plays an important role is *sexual guilt*. Indeed, people with a higher level of religiosity will also have a higher level of sexual guilt. If guilt had

already been shown to be a mechanism linked to religiosity and inhibiting sexual desire (Woo et al., 2012), the studies presented in Chapter 2 extend the role of this emotion to the inhibition of sexual behavior. Indeed, we were able to highlight strong correlations between sexual guilt and different behaviors, namely masturbation, consensual heterosexual behaviors (genital stimulation, oral sex, and vaginal intercourse) as well as anal sex. This role of guilt in inhibiting sexual behavior for people with a higher level of religiosity could be rooted in the social control which religion exerts. Indeed, religion suggests that negative consequences occur as a result of engaging in behaviors beyond religious prescriptions, and the internalization of norms may give rise to guilt (Grasmick, Bursik, & Cochran, 1991; Welch, Tittle, & Grasmick, 2006). According to some authors, religion uses guilt as a means of restricting sexual activity (Cowden & Bradshaw, 2007) and the taboos associated with these activities will create a kind of dependence on religion, which is the only way to appease the guilt felt (Runkel, 1998).

Two other moral emotions that have marked our interest are *disgust* and *purity*. Given their theoretical proximity, we decided to deal with these two moral emotions together rather than separately. Indeed, in the theoretical part of this thesis, we had advanced the central role of purity in many religious rites as well as the importance of being able to detach oneself from purely biological considerations that can induce disgust (e.g. secretions, violation of the bodily envelope) in order to be able to engage in sexual relations. In Chapter 2, we were able to highlight a link between these moral emotions and sexual behaviors such as masturbation, consensual heterosexual behaviors and anal sex. One possible explanation for this link would be that engaging in sexuality refers to the animal condition of humans and many triggers of disgust (bodily fluids, violation of the bodily envelope, possibility of contracting a disease) are part of it. A more surprising result, however, might concern the link between disgust/purity and more common sexual practices. Indeed, given the role of disgust in condemning homosexuality (Terrizzi et al., 2010), one might have expected that this moral emotion would more strongly affect "immoral" sexual behaviors such as masturbation or anal sex. However, we also find a negative link with more "classic" sexual behaviors. Inbar and colleagues (2009) propose that the notions of purity and disgust are in fact not only linked to moral violations, but that any act that could be seen as degrading, defiling or unnatural could reduce purity and, therefore, be considered immoral. Consequently, all sexual behavior, since it implies a certain defilement, will be able to be negatively associated with religion, via the importance of the notion of purity and the greater sensitivity to disgust demonstrated among believers (Haidt et al., 1994).

Also, and importantly, what is perhaps specific to the religion's distrust of sexual experience may be the co-existence of physical disgust with the moral disgust. Also, before making any solid affirmation about this issue, one may need first a meta-analysis of the existing studies/data in order to see (ideally definitively) which exact components of disgust religiosity relates to. Tybur (2009) proposes that besides pathogenic disgust and moral disgust there is also a specific disgust linked to sexuality that motivates individuals to avoid any contact that could lead to non-beneficial mating. Moreover, some researchers proposed view in sexual disgust the antithesis of sexual arousal (Koukounas & McCabe, 2001; Vonderheide & Mosher, 1988), and different from pathogen disgust in a way that the latter is diminished or even suppressed while engaging in sexual behavior with a healthy

and suitable partner. Future research is then needed to clarify the specific role of moral disgust vs physical or even sexual disgust.

In Chapter 4, we also experimentally tested the extent to which the effect of religious initiation on recall of sexual experience could be mediated by moral emotions of sexual guilt and/or purity. Unfortunately, we were unable to identify such links, which could be explained in different ways. First of all, from a purely methodological point of view, the task concerning purity may have suffered from its transposition into French. Indeed, the possibility of completing word fragments with solutions not related to purity was more important than finding solutions related to purity. Moreover, in a secularized population, this notion of purity linked to the sacred could be less present, and therefore not be activated by religious priming. This may also explain the lack of results regarding sexual guilt, which may be less likely to emerge in a context in which sexual norms are less restrictive. Some studies have already highlighted cultural differences (Asian vs. Canadian) in certain areas of sexuality (Brotto, Chik, Ryder, Gorzalka, & Seal, 2005; Brotto, Woo, & Gorzalka, 2012), including the propensity to feel sexual guilt (Abramson & Imai-Marquez, 1982; Brotto et al, 2012; Woo, Brotto, & Gorzalka, 2011), with the latter being stronger among people of Asian origin (and also having a higher level of conservatism) than among Canadians (having a freer vision of sexuality).

However, even if we have not been able to highlight the role of guilt and disgust/purity using a religious priming, there is still a positive association between religiosity and sexual guilt, as well as between religiosity and disgust/purity, which indicates that, even in a secularized population, religiosity implies moral emotions that can inhibit sexuality.

### **1.2.2 Interindividual, affective and cognitive predispositions**

Given the emphasis placed on self-control by religion, but the lack of interest shown by studies in exploring this variable in the religion-sexuality link, it seemed appropriate to assess the extent to which this mechanism played a role in this link. We decided to approach this vast field of self-control through *disinhibition*, on the one hand because this concept is often linked to risky sexual behaviors (Bancroft et al., 2003; Bancroft, Carnes, & Janssen, 2005; Epstein et al., 2014; Riggs et al., 2013) and on the other hand because it allowed us to approach a dimension of the individual that differs from emotions, affects and cognitions. In the empirical part of this thesis, disinhibition has been approached in two ways. First, we explored the extent to which this mechanism could moderate the relationship between religion and sexuality (see Chapter 5). Our hypothesis was that the decrease in religious/spiritual aspirations after sexual induction would be greater for those with higher disinhibition scores, which was confirmed by the results. This would indicate that disinhibited people would be more sensitive to the liberating effects of sexuality and therefore less attracted to the square and normative side of religion. However, this liberating effect seems to concern only the purely religious/spiritual domain and does not extend to the wider domain of morality, which could reflect religion's specific interest in self-control. A second way of approaching disinhibition in this thesis was to consider its potential role as mediator of the religion-sexuality link (see chapters 2 and 5). The experimental study proposing that disinhibition as a mediator between sexual induction and spiritual aspirations could not highlight such a role. This may be due to a methodological error or the fact that, compared to the other studies where we tested this mechanism, the

second study in Chapter 5 had the purely spiritual (but not normative) aspect of religion as a variable of interest. Cowden and Bradshaw (2007) did highlight a difference between the intrinsic and extrinsic dimensions and the "quest" dimension of religiosity in terms of impact on sexuality, the latter dimension being associated to a lesser extent with sexual guilt and discomfort in relation to masturbation. Additional analyses (not presented in the empirical part) investigating, via a meta-analysis method, on the one hand the link between religiosity and disinhibition and on the other hand between spirituality and disinhibition support this idea. Indeed, we can observe a stronger correlation for the first link ( $r = -.26$ ,  $p = .000$ ) than for the second ( $r = -.15$ ,  $p = .000$ ),  $z = -2.19$ ,  $p = .03$ . In view of the results, disinhibition seems to be an important personality mechanism to take into account in understanding the conflictual relationship between religion and sexuality, which promotes "liberating" aspects, useful for engaging in sexual activities that may therefore conflict with religious ideas, values and norms.

Beyond the more emotional or personality dimensions, we wanted to see the extent to which a cognitive dimension, such as *sexual fantasies*, could provide some explanation for the religion-sexuality link. In Chapter 2, we saw, on the one hand, the propensity of religiosity to inhibit sexual fantasies and, on the other hand, the important link between this mechanism and the frequency of sexual behavior. It is also interesting to note that these fantasies are strongly and negatively related to religious personality "traits" (guilt, disgust) and positively to mechanisms that promote engagement in sexual activities (disinhibition, pleasure seeking). These results not only support, but also extend those previously found by (Gil, 1990), extending the phenomenon of religious restriction of sexual fantasies to a non-conservative population. Ellison (2011) suggests that the rejection of sexual fantasies by religion comes from the fact that sexual fantasies may have as their subject partners other than the spouse, and thus imply infidelity. This has been found in various studies highlighting that the most popular fantasy involves being with a different partner than the current one (Davidson & Hoffman, 1986; Hicks & Leitenberg, 2001; Leitenberg & Henning, 1995). This explanation could also be consistent with the fact that the link between religiosity and fantasies is found not only in a very religious population, but also in secularized countries in which fidelity is equally valued.

A final mechanism that interested us in this thesis is the motivation to engage in sexuality. A first motivation often cited by individuals is the *search for pleasure* (Meston & Buss, 2007). In Chapter 2, we were able to highlight a negative link between this mechanism and religiosity, as well as a positive link with common sexual behavior and masturbation. The positive links with sexuality seem quite logical, and reflect the results obtained by Meston and Buss (2007), who put forward the search for pleasure as the primary motivation for engaging in sexual activity. The negative link with religiosity also echoes what we have argued in the theoretical part, that religion's values are antagonistic to those associated with sexuality and also that religion only recognizes sexuality for the sole purpose of procreation (Timmerman, 2001). Another motivation for engaging in sexual activities that we have addressed in this thesis is the desire for *bonding*. We have indeed studied this motivation in Chapter 4, and have been able to highlight the emphasis of religion on the emotional (but not physical) components of sexuality. In the specific case of this study, we showed that participants who had been subjected to religious initiation described their past sexual experiences in interpersonal terms (e.g. "I felt close to my partner", "I felt loved") rather than purely physical terms (e.g. "it felt good", "I slept with

someone"), and reported a higher level of motivation to create interpersonal relationships during sexual activities. The fact that this initiation of religion plays on the interpersonal dimension recalls the tolerance that religion has for the sexuality of married couples, and perhaps directs individuals to the stable and loving components of their couple, which is also valued by religious ideas (Hernandez et al., 2014).

Other motivations for sexual activity, such as goal attainment or insecurity, have been put forward by researchers (Meston & Buss, 2007). In comparison with the motivations discussed in this thesis (physical and emotional), we do not believe that religiosity plays an important role, beyond the simple fact of inhibiting sexuality. An exception could be found in two reasons that are part of the subfactor goal attainment, the first relating to having a child (and therefore which is an acceptable way of having sex), the second relating to "feel closer to God". However, although this last reason may be essential for part of the population, we agree with the authors that it is not a frequently cited motivation for having sex. This reason could join the idea of sanctification of sexuality endorsed by several researchers (Ellison, et al., 2011; Hernandez, et al., 2011; Murray-Swank, et al., 2005) stating that a broader spiritual concern can be found in sexuality. We do not believe that the sexual act itself can be spiritual. Indeed, as we have seen in Chapter 5 using sexual priming, there is a deeper conflict between sexuality and religion/spirituality and it may be that the self-reported spiritual aspects are more of a global representation of sexuality than a reality. This would be reflected in the results that we put forward in Chapter 4, which indicates a sublimation of past sexual experiences after activation of concepts related to religion. The normative aspect of religion in relation to sexuality could indeed induce people to consider retroactively and more strongly the dyadic, bonding and why not transcendental aspects of sexuality and by doing so, viewing sex as spiritual is more about a representation of an ideal sexuality rather than its reality.

### **1.2.3 Towards an integrative model**

One of the original features of this thesis is not only to try to highlight certain mechanisms that could explain the tension between religion and sexuality, but also to put these mechanisms in competition in order to better understand this link. To do this, we have proposed in Chapter 2 a model that takes up the different mechanisms proposed in this thesis that could explain the restrictive effects of religiosity on certain sexual behaviors (i.e. masturbation and consensual sexual practices).

Overall, we saw that the conflictual link between religiosity and sexual behavior was indeed underpinned by psychological mechanisms, both emotional and cognitive or motivational, which supports our idea that conflict between these two realities involves processes that go beyond the simple historical context. At first, we saw that religiosity was positively associated with the moral emotions proposed as well as negatively with the interindividual, affective and cognitive predispositions. However, once these mechanisms are put into competition, some seem to take over others in explaining the religious-sexual behavior link.

First, we can see that emotions of *disgust/purity*, although predicted by religiosity, are no longer linked to any of the behaviors. Given the emphasis placed by religion on the notion of purity, this result seems rather surprising to us. Indeed, disgust has already been shown to decrease sexual arousal (Andrews, Crone, Cholka, Cooper, & Bridges, 2015),

and, interestingly, sexuality has also been shown to be negatively associated with all three domains of disgust (de Jong et al., 2013), which reduces the possibility that our results are due to a mistake testing all three domains together. It is interesting to note that Timmers, Bossio and Chivers (2018) highlighted the fact that movies of a sexual character provoked very little disgust, which could suggest some form of resistance to the disgusting aspects of sexuality. This idea has been tested by various researchers showing that sexual arousal reduces sensitivity to disgust (Lee et al., 2014; Stevenson et al., 2011). More specifically, Lee and colleagues (2014) found clues (i.e. based only on an item "*Finding out that someone you don't like has sexual fantasies about you*") indicating that it is rather consensual activities that benefit from reduced disgust. In light of all these findings, continue to explore the extent to which disgust and/or purity play a role in the religion-sexuality nexus remains essential, as these moral emotions are at the heart of many religious rites, and clearly have an impact on different components of sexuality.

Secondly, we have observed that the role of *guilt* is no longer limited to masturbation. This could be due to the fact that in a secularized society, it becomes quite acceptable to have sexual relations such as those measured in our study (i.e. genital stimulation, oral sex and vaginal penetration); therefore, even when these behaviors go beyond the classical framework of religious teachings, they remain nonetheless valued by society, which implies that the violation of the norms of religion related to this type of behavior induces more guilt. However, when it comes to masturbation, sexual guilt remains a tangible mechanism between religiosity and this sexual practice. This could partly be explained by the fact that the bad reputation of masturbation does not come only from a religious heritage, but that until very late (in the 1950s) it was still seen as pathological (Bullough, 2003). This practice has been reported to be much less socially accepted (Davidson & Darling, 1993; Laumann, 1994). Consequently, it is likely that religiosity favoring sexual guilt will only impact sexual behavior that is still sensitive to public opinion, at least in a secularized population.

*Disinhibition* seems to follow the same pattern as sexual guilt, predicting only masturbation. In our view, this could be due to the same reasons as those explained above regarding guilt. In addition, as noted earlier, disinhibition may be useful in a context of letting go of standards. Indeed, the norms related to common sexual behaviors, compared to those related to masturbation, could already be quite free and therefore not have to benefit from the effects of disinhibition.

In the integrative model, the only mechanism that explains both masturbation and common sexual behaviors is having *sexual fantasies*. Although little studied in the literature, the propensity to generate fantasies is very important in the occurrence and maintenance of satisfactory sexuality (Leitenberg & Henning, 1995; Renaud & Byers, 2001). The fact that this mechanism is so central in the model we have proposed is perhaps due to the fact that this mechanism is in fact a very broad concept, which refers to almost any mental imagery that can provoke sexual desire in the individual and that can be provoked either intentionally, or by thoughts, feelings or sensations and that takes place as much in a dyadic as in a solitary relationship (Leitenberg & Henning, 1995). As a result, this broad concept could play an important role in explaining the other mechanisms included in this model, since fantasies have been shown to induce guilt, for instance (Cado & Leitenberg, 1990; Ellison, 2011; Kahr, 2009). We can observe strong correlations between this mechanism and the others ( $|r|$  between .24 and .52).

Finally, the *search for pleasure* is only associated with consensual sexual behaviors, and no longer with masturbation. In our opinion, this could be due to the taboo character of masturbation, a practice requiring the search for pleasure, but this motivation put in competition with guilt or disinhibition could no longer prevail. This could be all the more true since we are not only interested in what will or will not predict masturbation, but that in a certain way, we place this behavior in a religious context. The fact that religiosity hinders common sexual practices through inhibition of pleasure seeking could be explained by the conflict between values related to religion, oriented towards self-transcendence and those at the center of sexuality, oriented towards self-assertion. Bullough (2003) could also explain the importance of the pleasure-seeking mechanism as explaining the conflict between religiosity and common sexual behaviors (taking up behaviors other than vaginal penetration in a missionary position, the only practice accepted as acceptable (Bullough, 2003)).

As we have seen, the integration of the different explanatory variables of the religion-sexuality link is interesting to take into account, because it allows, to a certain extent, to better appreciate what is at stake among individuals confronted with these two realities. Fantasies do seem to play a crucial role, regardless of the sexual behavior involved. Guilt and disinhibition, on the other hand, are mechanisms that will impact less conventional sexual behaviors, such as masturbation, while the search for pleasure will rather come into play in the common religious-sexual behaviors. However, the role of disgust and purity remains less clear, these emotions being the subject of a great theoretical and theological emphasis that is not reflected in the results of this thesis.

### **1.3 Understanding the extent**

A final question of interest in this thesis was the extent to which the religion-sexuality link could extend to contexts other than those usually investigated (predominantly Christian/Protestant American population). We have therefore mainly investigated this link in a secular context (Belgium and France), on an adult sexually active population. We were also interested, to a lesser degree, in studying this link within a Muslim population, in a cultural context therefore different from the Christianity usually studied, and also tested to what extent this link could appear under conditions involving not only the individual, but also his partner.

#### **1.3.1 Other religious context: Islam**

The religious context most often studied is the Christian one. However, even if many religious discourses are along the same lines when it comes to sexuality (see Chapter 1, section 1.6 of this thesis), certain specificities can still be found. Indeed, in the Catholic context, it is very unusual to share information about sexuality, or sharing information about sexuality is important for the development of a healthy sexual life, whether emotionally or physically (Ansuini, et al., 1996) and therefore, certain moral emotions such as guilt might emerge due to the fact of this taboo. This echoes to the Reference Group Theory (Lefkowitz, et al., 2004; Thornton & Camburn, 1989), which states that young people will refer to the principles of their religion when it comes to their sexuality. Interestingly, if a religious context, such as Islam, promotes a certain sharing of experience

or promotes a certain sexuality, the mechanisms that will explain the link between religion and sexuality could be distinguished.

In the empirical part of this thesis, we investigated the extent to which the rather negative link could extend to a religion other than those usually studied. To do this, we transposed the model developed in the first study in Chapter 2 to a Muslim population. We have shown that, in general, the negative link between religion and sexuality is found, whether in a Catholic population or a Muslim population. This confirms what we established in the theoretical part of this work, namely that different religions seem to hold the same restrictive discourse with regard to sexuality.

Beyond testing the link directly, we also investigated the extent to which the mechanisms at work in a Catholic population could also apply to a Muslim population. The results confirm our hypothesis that mechanisms of guilt, disgust/purity, disinhibition and sexual fantasies are at work in a similar way in monotheistic religions given their similarities regarding sexual morality. These results are consistent, for example, with those of a study that reported that for 90% of Muslim women, masturbation is a source of shame and guilt (Kadri et al., 2007).

However, also reflecting our theoretical reflection, we found a difference between the Catholic and Muslim samples regarding the correlation between religiosity and seeking sexual pleasure as motivation for engaging in sexual activities. Indeed, whereas in the Catholic sample religiosity is negatively linked to the search for pleasure, there is an absence of correlation in the Muslim sample. This could be due to a certain valorization of an intra-marital sexuality, in which the search for pleasure occupies an important place. However, even if, contrary to the Catholic religion for example, physical pleasure should not be put aside, we do not observe either a positive link between religiosity and the search for pleasure (and this, even for married people,  $r = -.09$ , *ns*)<sup>1</sup>. This may reflect the ambiguous place of sexual pleasure in Islam. Indeed, even if pleasure is recognized as an integral part of spouses' sexuality, it can also be perceived as harmful for the couple, making women more prone to adultery (Joseph & Najmabadi, 2003). Targeted research on the issue of pleasure from an interreligious perspective would be interesting to conduct and might be able to shed light on this place of pleasure in sexuality.

### **1.3.2 In the couple context**

We have seen, in the theoretical part of this work, that religion not only has implications for sexuality at the intra-individual level, but that religion can also have effects on how individuals experience their relationships with their partner(s). Through various studies, we have addressed certain components of the couple's sexuality that could be affected by religion, namely the importance of the "bonding" aspects of sexual relations, marital and sexual satisfactions, as well as the components of love (Sternberg, 1997).

---

<sup>1</sup> Note: In Chapter 2, we report correlations for single vs. couples in order to compare them with those obtained for the Catholic sample. However, for the Muslim sample, we have a finer definition of marital status (single, couple, cohabiting, married), which allowed us to make the correlations presented in this section on married persons ( $N = 49$ ).

In Chapter 4, we were able to highlight the effects of religious priming on how individuals will recall a past sexual experience. Starting from the observation that the activation of religious ideas will make people more focused on the *emotional components* of the relationship, we can, while remaining cautious, imagine that daily believers will be more inclined to these "romantic" aspects of their sexuality. One explanation could be that religion, having a function of creating a bond (Saroglou, 2011), will promote this search for a bond in other areas of people's lives such as sexuality. Some research has shown that activation of the cerebral areas linked to attachment will determine certain sexual strategies put in place by individuals (Birnbaum, Reis, Mikulincer, Gillath, & Orpaz, 2006).

In Chapter 3, we looked at the influence of religiosity on *marital and sexual satisfactions* from a dyadic perspective. We were able to show that, within the couple, the religiosity of the woman holds an important place, affecting at the same time the sexual satisfaction of the woman, but also that of the man. One element that may suggest that this effect is found in women and not men may be that women are more likely than men to be influenced by social factors such as education or religion (Okami & Shackelford, 2001), particularly when it comes to sexual experiences (Baumeister, 2000). Similarly, a link between religious attendance and perceived relationship quality was found to be stronger among women than men (Wolfinger & Wilcox, 2008).

Another interesting result is the fact that religiosity has an impact only on sexual satisfaction and not relational satisfaction. This suggests the restrictive role that religion has on sexuality, while highlighting the relational aspects of the couple. In the same vein, we also observed that religious women reported low interest in the components of intimacy and passion, but not low levels of commitment. This negative influence that religion has on the purely sexual aspects of the relationship and on sexual satisfaction echoes what we have previously highlighted in the section dealing with the functioning of the religion-sexuality link and could be explained by the inhibition of fantasies and physical research as well as by an increase in sexual guilt.

### **1.3.3 Similarities between men and women**

Even if the question of a potential gender difference was not at the heart of the present work, it nevertheless seems interesting to discuss the results obtained on this issue. Overall, in the present work we have not highlighted important differences between men and women, but in Chapter 3 we have stressed the importance of women's religiosity in the sexual satisfaction of partners. We have previously suggested that women may be more sensitive to societal factors.

Researchers use different theories to explain these gender differences. A first theory is evolutionary theory (Buss & Schmitt, 1993), in which gender differences or similarities are explained by whether males and females have faced the same adaptive problems or not. As far as sexuality is concerned, this theory puts forward the fact that women are more in search of long term mating while men are more oriented towards sociosexuality. Another alternative to evolutionary theory, the social role theory (Eagly, 1987), proposes that differences between men and women are due to social constructions of work sharing in order to have a productive society. This theory also proposes that psychological and social factors mediate this relationship. The resulting social roles will thus create normative social pressure, prescribing what men and women can and cannot do. Regarding sexuality,

women are expected to focus on it's emotional aspects while men are allowed to focus on the more physical side of things. This aspect of sexuality is found, for example, in the motivations to have sex (Meston & Buss, 2007), these authors noting that men are more likely to endorse physical reasons and women more emotional ones. However, although some differences can be found, the authors point out that of the 25 reasons they put forward, only five differ between men and women. This point is also found in other studies, showing that although women are slightly more restrictive regarding socio-sexuality (Schmitt & Fuller, 2015), the size of these differences is very modest. Furthermore, women interviewed in Chapter 3 do not show higher religiosity than men. The question of the influence of the woman's religiosity on both partners of the couple remains open.

Alongside these theories of gender differences, more and more studies point in the direction that there are more similarities than differences concerning the sexuality of men and women. Through the studies of this thesis, very few differences between men and women have been highlighted. These results might seem surprising, however, as emphasized by (Lehmiller, 2014), this idea that men and women differ significantly is perhaps more of a societal construct than a psychological reality. Petersen and Hyde (2010) confirm, through a meta-analytic approach, that gender differences are more of an exception than a rule, pointing to differences mainly in masturbation and pornography consumption as well as attitudes towards casual sex. This over-interpretation of the differences between men and women could be explained by a social conformity bias. Indeed, it has been shown that women report having fewer sexual partners when they think their answers can be disseminated than when they are sure that their answers will be anonymous (Alexander & Fisher, 2003).

In light of our results and those put forward by other researchers, we focus more on the fact that the religion-sexuality link is found in both men and women, especially when it comes to common sexual behaviors. We do not deny that some differences may emerge depending on the aspects of sexuality that will be linked to religion (such as sexual satisfaction presented in Chapter 3, or sociosexuality (Lippa, 2009; Schmitt & Fuller, 2015), but we believe that these will be more exceptional and due to the normative aspects involved by religion (as suggested in the social role theory (Eagly, 1987)), such as gender roles or social structures (Lippa, 2009)<sup>2</sup>.

#### **1.3.4 Secular population**

With the exception of study 2 of Chapter 4 (US population) and studies 2 and 3 of Chapter 5 (Croatian population), the research presented in this thesis took as reference population individuals from all coming from secularized countries (Belgium and France) in order to test different hypotheses of the religion-sexuality link. Interestingly, we have demonstrated, through our various studies, that even in a society that wants to be free of religious ideas, values and norms and that lets (appear?) an almost total freedom and tolerance on (heterosexual) sexuality, the simple fact of evoking religion will impact the way individuals consider, and live their sexuality. This reflects, at a more individual level,

---

<sup>2</sup> This researcher, through a cross-cultural analysis on 53 countries, points out that there is no gender difference concerning the religion-sex drive link and that the one appearing between religion and sociosexuality disappears when gender role variables are entered in covariates in the model.

the results obtained in international studies that find a negative link between religiosity and a liberal orientation of sexuality (Schmitt & Fuller, 2015).

Another interesting result to note is that, in none of our studies, a moderating effect of religiosity could be shown. This suggests that the conflict between religion and sexuality is quite entrenched among individuals, and that the mere explanation of religious socialization is probably not enough. This could also stem from the fact that certain norms and values advocated by religion are integrated, mixed with societal values. As a result, whether a person is a believer or a non-believer, he or she will have assimilated norms regarding sexuality that can be derived from religion. This idea can be supported by research on religious priming. This has indeed, as in the studies presented in this thesis, been shown to affect both believers and non-believers (Randolph-Seng & Nielsen, 2007; Shariff & Norenzayan, 2007; Toburen & Meier, 2010). Shariff and colleagues (2015), however, qualify this point by emphasizing, through a meta-analysis, that the effects of religious initiation on non-believers are not systematically found. According to these authors, this would be based on an activation of certain beliefs already anchored in the individual. Another hypothesis, which would be supported by the results presented in this thesis, could be that a stereotyped activation of religious constructs, values, attitudes or behaviors would be able to produce this negative link between religion and sexuality, whether among believers or non-believers.

## **1.4 Limitations**

During the empirical part of this work, limitations were raised in the various chapters. We will not go back over these, but rather point out transversal limitations.

### **1.4.1 Generalization of Results**

A first limitation comes from the samples used in our studies. Although we have attempted to collect data on a larger population than a student population, our samples are still quite young and predominantly female. It is therefore quite possible that if more men had participated in our studies, more definitive results on the gender issue might have emerged.

Similarly, as sexuality and religion evolve throughout life (e.g. more permissive attitudes, less instrumentality among young people) (Le Gall et al., 2002), greater variability in age might have allowed us to refine our results. Moreover, some of the mechanisms we have studied also appear to evolve over the life course, with sexual fantasies (Purifoy, Grodsky, & Giambra, 1992), disinhibition (Zuckerman, et al., 1978) declining with age. We could also have attempted to approach our different questions by collecting topics by age categories to assess the extent to which there would be a cohort effect on religious-sexuality connection. Studies have highlighted positive changes in attitudes towards premarital sex and homosexuality but an increase in extra-marital disapproval (Treas, 2002; Twenge, et al., 2015; Wells & Twenge, 2005). Studies looking at cohort effects on religion-sexuality is still needed, studies showing different effects depending on the sexual attitude or behavior studied. Moreover, it is also important to keep in mind other variables, such as education or ideologies (Treas, 2002), that could also influence this link.

Then, and still related to sampling, there could be some self-selection of participants through our studies. Some individuals, who would probably be very interesting to include in our studies, are not inclined to answer questionnaires on religion and/or sexuality. Studies report that it is more often women (Lehmiller & Agnew, 2006; Lehmiller, VanderDrift, & Kelly, 2011) with more sexual experience and more favorable attitudes (Plaud, Gaither, Hegstad, Rowan, & Devitt, 1999) who will take part in sexuality studies. In addition to avoiding desirability or priming bias, we have tried to mask the real purpose of our studies, but in many cases, we have observed participants abandoning when issues related to sexuality arose. Finding a solution to this problem is quite complicated, and this is one of the reasons that we have varied the study designs hoping to be able to question individuals in a roundabout way on certain questions.

Finally, apart from the Muslim sample, the participants who took part in our studies had fairly low scores in religiosity ( $M < 3$  on a 7-point Likert scale). If this low score is inherent to the secularized context in which our studies were conducted (less than 50% of Belgians say they are Catholics and less than 5% attend religious services (Havermans & Hooghe, 2011), the low level of religiosity could also, to some extent, influence our results. Indeed, it has been shown that people with a higher religiosity score report a different personality pattern than people with a lower religiosity (e.g., higher pleasantness and conscientiousness, greater benevolence, greater sensitivity to disgust (Haidt et al., 1994; Saroglou, 2010; Saroglou et al., 2004)), and certain mechanisms for example, such as purity or disgust, or variables related to marital and sexual satisfaction could have been more nuanced. However, it should be noted that the explicit nature of our research on sexuality may also have acted as a filter, with more religious people perhaps considering that sexuality depends exclusively on the private domain (which, for example, poses certain problems when it comes to giving sex education courses to young people (Irvine, 2004).

#### **1.4.2 Complexity of studied concepts**

The fields of religion and sexuality being very vast and calling upon many psychological, biological or social mechanisms, it is very difficult, even almost impossible, to be able to take into account all the facets of these realities and to operationalize them. We therefore had to make choices when selecting the variables for our studies, but we kept in mind the importance of diversifying them.

In our studies, we decided to approach religion in different ways. First of all, we used a questionnaire containing three items, the aggregation of which gives us an indication of the degree of religiosity of the person. This method, very often used (e.g. Clobert & Saroglou, 2013; Uzarevic, Saroglou, & Clobert, 2017; Van Cappellen, Toth-Gauthier, Saroglou, & Fredrickson, 2016) gives the advantage of being concise and easy to use in a secular context without causing problems such as boredom or annoyance (Saroglou, 2014). Next, we used a supraliminal religious priming method (i.e. participants may be aware of the initiation) (see Chapter 4). This method has the advantage of temporarily inducing religious ideas in the participants, and thus manipulating the effects of religion. However, it is also in this broad activation that one can find a limit of this method, unable to control which aspects of religion are activated, the effects of priming extending to a wide variety of cognitive and behavioral processes (LaBouff, 2011). However, although this method has some limitations, it also has the advantage of not being subject to social desirability (Sedikides & Gebauer, 2010) and is well complementary to the other methods used in this

thesis. Finally, we also used a behavioral intention measure to test the attractiveness of religion as a dependent variable (see Chapter 5). This has the advantage of being a fairly subtle measure and therefore less influenced by social desirability. Even if this way of proceeding does not directly capture the extent to which an individual will or will not pose a behavior, it nevertheless remains a tangible indicator of the attraction of the religious and is easier to measure than behavior (Saroglou, 2014).

Sexuality has, been approached, in most of our studies, through questionnaires. As raised in the previous point, a self-selection bias may arise from this approach to sexuality. Moreover, social desirability is often a bias in studies on sexuality (Meston, Heiman, Trapnell, & Paulhus, 1998) that we have tried to reduce by making it clear that the data would be treated anonymously, as advocated by Lehmiller (2014). Even if the questionnaire approach suffers from limits, it is rather delicate to be able to apprehend in an ethical and non-intrusive way the sexuality of individuals and this method thus remains the easiest to set up. In addition to the questionnaires, we also used a recall task in memory. In Chapters 3 and 5, we did ask participants to recall a past sexual experience and describe it in a few lines. This task is inspired by the literature in emotional psychology which uses the recall of an emotional memory as a trigger for this emotion (Prade & Saroglou, 2016) and is based on the fact that sexual arousal could be related to emotions through the reactions it implies (e.g. body response, feeling, tendency to action; Everaerd, 1989). Therefore, this task could suffer from different limitations, such as memory recovery, participant mood, or attention bias (Philippot, 2013). Nevertheless, we were not particularly interested in the veracity of that memory, but rather in how people would describe it.

Even if these limits of simplification of the concepts of religion and sexuality deserve to be raised, it should be noted that, in psychology, having a global approach of such complex phenomena is not possible and the only way to apprehend them is to reduce them into different operationalizable and testable variables and to vary the approaches and measures, which we have tried to achieve in this work.

### **1.4.3 Theory-based approach and social norms**

Another limitation to our work is the fact that we have not based our research on a more inclusive theory that allows us to approach the religion-sexuality link. Indeed, we dealt with different questions that could be linked to different theoretical currents and we did not wanted to restrict ourselves to a particular theoretical framework. In addition, theories such as the Planned Behavior Theory (Ajzen & Fishbein, 1977) generally measure very specific behavior, so more models are needed to better understand the (more general) sexuality of individuals. Moreover, in the theory of planned behavior, attitudes are advanced as an explanation for behavior. However, we decided not to propose attitudes in the explanatory processes for different reasons. First of all, a substantial part of the literature on the religion-sexuality link has as an independent variable of interest the different sexual attitudes. Second, attitudes are generally a broader variable, encompassing narrower concepts, which can then capture the explanatory variance of these interesting concepts. Moreover, attitudes are often measured too proximally to behaviors (e.g. attitudes about oral sex practice and practice itself), which can distort their involvement. Finally, as discussed in the introduction to the section on sexual attitudes, not all the theories agree on the previous role of attitudes on behaviors. other theories could also be applied to the religion-sexuality link but also seem to us too restrictive in the study of realities as broad as

religion and sexuality. Nevertheless, some of our results can be interpreted in the light of certain theories, such as the Social Role Theory (Eagly, 1987) or the Social Learning Theory (Bandura, 1969) regarding certain gender differences, the Reproductive Religiosity Model (Weeden, et al., 2008) to explain, through an evolutionary approach, why religion leads to a restriction of sexuality.

Another limitation of our work is the fact that we have not taken social aspects, such as standards, into account in our studies. However, previous research (Albarracín, et al., 2001; Helm, et al., 2009; Hull, et al., 2011) suggests that social norms are important to consider. More specifically, we could have assessed the importance of religious education, negative parental attitudes about sexuality, or the extent to which normative peer pressure might mediate the link between religiosity and sexual behavior. Indeed, it was found that participating in religious service (and thus being involved in a community) was a fairly strong predictor of perceived relational quality, at least among women (Wolfinger & Wilcox, 2008) or that education and religion were particularly important for women's sexual development (Baumeister, 2000; Okami & Shackelford, 2001). Normative pressure could also come into play in religiosity-sexual satisfaction. Indeed, we could imagine that women would be less pressured to be sexually satisfied than men, since it is less expected of a woman to be interested in physical sexuality (as suggested by evolutionist theories or the Social Role Theory). Given the importance of norms, future research should attempt to explain the religion-sexuality relationship using a theory or model that includes both individual aspects (such as moral emotions, emotional and cognitive dispositions) and social aspects (e.g. social norms, specific norms of religion investigated regarding sexuality, education).

Given the importance of both intra-individual (such as the psychological mechanisms put forward in this thesis) and inter-individual (such as dyadic aspects or more broadly social norms) components, it would be necessary to combine different theories to fully understand what is at stake in the religion-sexuality link. One approach we would find interesting to investigate would be to use a model such as the biopsychosocial model (Engel, 1981). This would make it possible to insert the mechanisms that we have highlighted in this thesis (psycho), and to integrate them with the more normative (social) aspects that we have not studied in this work, while taking into account the instinctive aspects of (bio) sexuality. Also, the evolutionist perspective (Buss & Schmitt, 1993) seems interesting to us because, as the biopsychosocial model, it integrates many facets of the individual (to try to explain a phenomenon, which can be as complex as sexuality).

#### **1.4.4 Effects sizes**

A last limitation that we will develop here concerns the size of the effects that we have highlighted in our studies. First of all, religion is far from explaining everything about sexuality. Indeed, the variables that will come into play in a person's sexuality are innumerable and are as much biological as psychological or social. This multitude of facets of sexuality nevertheless allows us to put our results into perspective, because, even if the sizes of effects shown in the empirical part are not always very high, seen in a more global way, the effects of religion still have a certain weight on sexuality. Second, the size of the effects found leaves room for the assumption that mechanisms other than those presented in this thesis could be at work. We could, for instance, assume an effect of religion inhibiting (perception) sexual desire (a very important predictor of sexual behavior (Basson, 2006)),

which has been found to inhibit disgust (Lee et al., 2014) or exacerbate the perception of judgment by peers (Burris & Viscontas, 2012) or by God (Burris & Viscontas, 2012; Shariff & Norenzayan, 2007).

Future research should focus on a systematic literature review as well as a meta-analysis to see the importance of the impact of religiosity on different sexual outcomes.

### **1.5 Future perspectives and practical implications**

This thesis addresses, in an integrated manner, an issue that relates to various fields of psychology (e.g. personality, emotional, social, evolutionary psychology). Through these various approaches, we have provided a more comprehensive understanding of this association than is usually considered.

Nevertheless, directly inspired by the point concerning the limitations of our work, we believe that future research should pay close attention to the specific effects of spirituality on sexuality. These could clarify previously established results (such as those of the association between spirituality and liberal attitudes (Beckwith & Morrow, 2005) or between spirituality and many partners (Burris et al., 2009)), as there remain questions related to the causality or extent of this relationship that, to our knowledge, have never been addressed. Similarly, it would be interesting to determine what mechanisms are linked to the spiritual-sexual relationship that seems more positive than that between religion and sexuality. Researchers have already proposed sanctification as an explanatory mechanism (Hernandez et al., 2011; Murray-Swank et al., 2005), but personality traits such as openness to experience (Piedmont & Wilkins, 2013; Saroglou, 2002; Saucier & Skrzypińska, 2006), the propensity to feel positive emotions (Fredrickson, 2013) or the more general feeling of being part of a whole (Emmons, 1999; Van Cappellen & Saroglou, 2012) could all be mechanisms linked to spirituality that could promote positive sexual attitudes and behaviors.

Another possibility for extending this thesis would be to explore the religion-sexuality link among married people (religiously) in comparison to cohabiting people. As we saw in the introduction to this thesis, there is a certain tolerance in religion of sexuality taking place within marriage. However, we have also pointed out that, for some people, even believers, it is aspects of commitment and emotional involvement in a relationship that will have a positive influence on sexuality (Murray-Swank et al., 2005). This distinction between marriage and cohabitation is all the more important in a context in which more and more couples are choosing not to formally marry (Smock & Greenland, 2010). The few studies that have specifically considered unmarried couples show a positive link between religion and relationship satisfaction (Henderson et al., 2018) as well as commitment (Owen et al., 2011). It would therefore be interesting, in our view, to examine the question of the impact of religion on sexual behavior by comparing married and unmarried couples, as well as to evaluate to what extent the same mechanisms are at work (e.g. is guilt stronger among unmarried persons? Do unmarried people make more use of disinhibition mechanisms? Is there a different impact of religiosity on marital and sexual satisfaction for married or cohabiting people?

A final way of extending this work could be to approach the conflict between religion and sexuality by examining the possible effects common to these two realities

instead of considering what opposes them. Religion, having a function of creating a bond (Saroglou, 2011), could indeed see sexuality as a competitor, which also fulfils the need to belong. As discussed several times, the search for and maintenance of emotional ties is one of the most popular motivations for sexuality (Meston & Buss, 2007) and is automatically activated by the sexual system (Gillath, Mikulincer, Birnbaum, & Shaver, 2008). As a result, people turning to their partners may more easily abandon their religious and spiritual aspirations. This question of competition between religion and sexuality based on their common functions (i.e. the need to belong) would allow us to take a step forward in understanding the link between these two realities.

Beyond the perspectives that can be envisaged on the basis of our studies, certain practical implications may arise. It seems to us that the results, particularly those concerning the functioning and extent of the relationship between religion and sexuality, may be of interest to professionals working in the field of sexuality. Researchers had already found that religious beliefs could have an impact on the decourse of sexual therapies, and more specifically influence the demand for help and generate resistance or even drop-out from sexual therapies (Simpson & Ramberg, 1992). Our studies would make it possible, to a certain extent, to widen this observation to a secular population and, therefore, to tackle this problem with professionals in countries where religion seems to be of less importance. In addition, we believe that two complementary areas of sexuality could directly benefit from our results, namely sex education and sexual disorders.

As far as sex education is concerned, it would, in our opinion, be important to be able to deconstruct the myths of sexuality conveyed by religion. While respecting the beliefs of individuals (it is recommended that the therapist be sensitive to the values of the patient as well as be aware of his own attitude toward religion (Giglio, 1993)), it should be possible to approach sexuality accurately, incorrect information about sexuality having a negative effect on emotional and physical well-being (Ansuini, Fiddler-Woite, & Woite, 1996). However, religious institutions are recognized as promoting restrictive sexual ideologies and prescribing scenarios and standards regarding sexual activities (with whom, how, when, where) (Regnerus, 2005). This is found at least in the United States; but given our results, it would seem that these ideologies are found not only in a context where religion occupies an important place, but also in a secular context like Belgium or France. These ideologies tend to activate certain mechanisms put forward in this thesis, such as guilt, disgust or inhibition. Promoting sex education respectful of beliefs, but fair would, at least to some extent, defuse these mechanisms. Moreover, the misuse of contraceptives has been highlighted in a population of young French believers (Moreau et al., 2013), which supports the idea of the present work that points to a negative effect of religion on many areas of sexuality, even in a secular context.

Still in this educational perspective, it would be interesting to establish or include in a training programme a section dealing with religion. Indeed, we have put forward some explanatory part of it on different facets of sexuality and professionals likely to approach this issue with their patients should be made aware of this issue. In the same way, it also seems appropriate to us to suggest to these practitioners a work on oneself aiming at evaluating their own religious beliefs, so that these do not interfere with a good care of the patient. In the Flemish part of Belgium, there is a rather extensive sex education programme (Sensoa), one of whose missions is to strengthen sex education for migrants

(Vlaanderen, 2018), and in our opinion, the results of this thesis could be used very concretely to build awareness workshops for patients or professionals.

The issue of religion should also have its place in the assessment and management of sexual disorders. Indeed, Kadri, Alami, and Tahiri (2002) show that 89.1% of women report little knowledge of their body or erogenous zones as a reason for sexual dysfunction. Studies should examine the extent to which religious education will impede knowledge of the body, but given the emphasis on virginity, immorality and conservatism of sexuality in religious sexual education (Jaccard & Dittus, 1991; Regnerus, 2005), this will have little or no relevance to the aspects related to attaining pleasure (Cowden & Bradshaw, 2007). Moreover, we have seen the inhibitory effect of religion on the propensity to generate and accept sexual fantasies. Although the generation of fantasies is questioned as a diagnostic criterion (alone) for a sexual disorder given its low frequency (Brotto, 2010), it is nonetheless essential to sexuality in order to provoke and maintain sexual excitement (Brotto, 2010; Brotto, Heiman, & Tolman, 2009; Leitenberg & Henning, 1995). In addition, hypoactive sexual desire, one of the most prevalent sexual disorders (Riley & May, 2001), may come from parasitic thoughts (Géonet, De Sutter, & Zech, 2013). It would be interesting to assess to what extent religious thoughts come into play or whether emotions such as guilt over transgression of certain religious norms cannot explain part of the sexual disorder.

## **2. Take home message**

There is no doubt that the relationship between religion and sexuality is complex and depends on many factors. This thesis has measured its causal direction (which must be considered bi-directional), functioning (guilt, disgust/purity, disinhibition, sexual fantasies, seeking pleasure and connection are all mechanisms that will, to some extent, come into play) and extent (Catholic, Muslim, secular population individual and dyadic level). The results obtained through our studies support the fact that there is indeed a conflict between religion and sexuality, and that it is not simply the result of a residual religion but of deeper psychological mechanisms. Nevertheless, the results should not be interpreted as illustrating a strict opposition between these two concepts. The results leave room for other mechanisms that may influence this relationship. Moreover, we are well aware that these two domains are very sensitive to interindividual differences, and do not exclude the possibility that some people may find self-transcendent aspects to sexuality, live it as a spiritual experience or may conceive it in a way that is fully integrated with their religion. However, it is important to keep in mind that religion can have an important influence on sexuality, even in a context that values self-affirmation and free expression.

## References

---



- Aalsma, M. C., Woodrome, S. E., Downs, S. M., Hensel, D. J., Zimet, G. D., Orr, D. P., & Fortenberry, J. D. (2013). Developmental trajectories of religiosity, sexual conservatism and sexual behavior among female adolescents. *Journal of Adolescence*, 36(6), 1193–1204. <https://doi.org/10.1016/j.adolescence.2013.08.005>
- Abbott, D. M., Harris, J. E., & Mollen, D. (2016). The impact of religious commitment on women's sexual self-esteem. *Sexuality & Culture*, 20(4), 1063–1082. <https://doi.org/10.1007/s12119-016-9374-x>
- Abbott, E. (2003). *Histoire universelle de la chasteté et du célibat*. Les Editions Fides.
- Abramson, P. R., & Imai-Marquez, J. (1982). The Japanese-American: A cross-cultural, cross-sectional study of sex guilt. *Journal of Research in Personality*, 16(2), 227–237. [https://doi.org/10.1016/0092-6566\(82\)90078-2](https://doi.org/10.1016/0092-6566(82)90078-2)
- Adamczyk, A., & Hayes, B. E. (2012). Religion and sexual behaviors understanding the influence of Islamic cultures and religious affiliation for explaining sex outside of marriage. *American Sociological Review*, 77(5), 723–746.
- Adamczyk, A., & Pitt, C. (2009). Shaping attitudes about homosexuality: The role of religion and cultural context. *Social Science Research*, 38(2), 338–351. <https://doi.org/10.1016/j.ssresearch.2009.01.002>
- Addai, I. (2000). Religious affiliation and sexual initiation among Ghanaian women. *Review of Religious Research*, 41(3), 328–343. <https://doi.org/10.2307/3512033>
- Agha, S. (2009). Changes in the timing of sexual initiation among young Muslim and Christian women in Nigeria. *Archives of Sexual Behavior*, 38(6), 899–908. <https://doi.org/10.1007/s10508-008-9395-0>
- Ahrold, T. K., Farmer, M., Trapnell, P. D., & Meston, C. M. (2011). The relationship among sexual attitudes, sexual fantasy, and religiosity. *Archives of Sexual Behavior*, 40(3), 619–630. <https://doi.org/10.1007/s10508-010-9621-4>
- Ahrold, T. K., & Meston, C. M. (2010). Ethnic differences in sexual attitudes of U.S. college students: Gender, acculturation, and religiosity factors. *Archives of Sexual Behavior*, 39(1), 190–202. <https://doi.org/10.1007/s10508-008-9406-1>
- Ajzen, I. (2005). *Attitudes, Personality, and Behavior*. McGraw-Hill Education (UK).
- Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, 84(5), 888–918. <https://doi.org/10.1037/0033-2909.84.5.888>
- Albarracín, D., Johnson, B. T., Fishbein, M., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: a meta-analysis. *Psychological Bulletin*, 127(1), 142–161.
- Al-Darmaki, F. R., Hassane, S. H., Ahammed, S., Abdullah, A. S., Yaaqeib, S. I., & Dodeen, H. (2016). Marital satisfaction in the United Arab Emirates: Development and validation of a culturally relevant scale. *Journal of Family Issues*, 37(12), 1703–1729. <https://doi.org/10.1177/0192513X14547418>

- Alexander, M. G., & Fisher, T. D. (2003). Truth and consequences: Using the bogus pipeline to examine sex differences in self-reported sexuality. *Journal of Sex Research*, 40(1), 27–35. <https://doi.org/10.1080/00224490309552164>
- Allen, E. S. (2005). Intrapersonal, interpersonal, and contextual factors in engaging in and responding to extramarital involvement. *Clinical Psychology: Science and Practice*, 12(2), 101–130. <https://doi.org/10.1093/clipsy/bpi014>
- Amato, P. R. (2010). Research on divorce: Continuing trends and new developments. *Journal of Marriage and Family*, 72(3), 650–666. <https://doi.org/10.1111/j.1741-3737.2010.00723.x>
- Andrews, A. R., Crone, T., Chotka, C. B., Cooper, T. V., & Bridges, A. J. (2015). Correlational and experimental analyses of the relation between disgust and sexual arousal. *Motivation and Emotion*, 39(5), 766–779. <https://doi.org/10.1007/s11031-015-9485-y>
- Ansuini, C. G., Fiddler-Woite, J., & Woite, R. S. (1996). The source, accuracy, and impact of initial sexuality information on lifetime wellness. *Adolescence*, 31(122).
- Argue, A., Johnson, D. R., & White, L. K. (1999). Age and religiosity: Evidence from a three-wave panel analysis. *Journal for the Scientific Study of Religion*, 38(3), 423–435. <https://doi.org/10.2307/1387762>
- Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behavior: A meta-analytic review. *The British Journal of Social Psychology*, 40, 471–499.
- Ashton, M. C. (2013). *Individual Differences and Personality*. Academic Press.
- Atkins, D. C., & Kessel, D. E. (2008). Religiousness and infidelity: Attendance, but not faith and prayer, predict marital fidelity. *Journal of Marriage and Family*, 70(2), 407–418.
- Bačák, V., & Štulhofer, A. (2011). Masturbation among sexually active young women in Croatia: Associations with religiosity and pornography use. *International Journal of Sexual Health*, 23(4), 248–257. <https://doi.org/10.1080/19317611.2011.611220>
- Bain, P. G., Vaes, J., & Leyens, J.-P. (Eds.). (2014). *Humanness and Dehumanization*. New York: Psychology Press Ltd.
- Ballarin, P., Euler, C., Le Feuvre, N., & Raevaara, E. (n.d.). La femme dans le christianisme: représentations et pratiques. Retrieved March 29, 2018, from <http://www.helsinki.fi/science/xantippa/wef/wef26.html>
- Bancroft, J., Carnes, L., & Janssen, E. (2005). Unprotected anal intercourse in HIV-Positive and HIV-Negative gay men: The relevance of sexual arousability, mood, sensation seeking, and erectile problems. *Archives of Sexual Behavior*, 34(3), 299–305. <https://doi.org/10.1007/s10508-005-3118-6>
- Bancroft, J., Janssen, E., Strong, D., Carnes, L., Vukadinovic, Z., & Long, J. S. (2003). Sexual risk-taking in gay men: The relevance of sexual arousability, mood, and sensation seeking. *Archives of Sexual Behavior*, 32(6), 555–572. <https://doi.org/10.1023/A:1026041628364>

- Bandura, A. (1969). Social-learning theory of identificatory processes. In *Handbook of socialization theory and research* (pp. 213-262.).
- Barkan, S. E. (2006). Religiosity and premarital sex in adulthood. *Journal for the Scientific Study of Religion*, 45(3), 407–417. <https://doi.org/10.1111/j.1468-5906.2006.00315.x>
- Barry, C. M., Willoughby, B. J., & Clayton, K. (2015). Living your faith: Associations between family and personal religious practices and emerging adults' sexual behavior. *Journal of Adult Development*, 22(3), 159–172. <https://doi.org/10.1007/s10804-015-9209-2>
- Basson, R. (2006). Sexual desire and arousal disorders in women. *New England Journal of Medicine*, 354(14), 1497–1506. <https://doi.org/10.1056/NEJMcp050154>
- Bauer, I. M., & Baumeister, R. F. (2011). Self-regulatory strenght. In K. D. Vohs & R. F. Baumeister (Eds.), *Handbook of Self-Regulation, Second Edition: Research, Theory, and Applications*. Guilford Press.
- Baughman, H. M., Jonason, P. K., Veselka, L., & Vernon, P. K. (2014). Four shades of sexual fantasies linked to the Dark Triad. *Personality and Individual Differences*, 67, 47–51. <https://doi.org/10.1016/j.paid.2014.01.034>
- Baumeister, R. F. (2000). Gender differences in erotic plasticity: The female sex drive as socially flexible and responsive. *Psychological Bulletin*, 126(3), 347–374. <https://doi.org/10.1037//0033-2909.126.3.347>
- Baumeister, R. F., & Exline, J. J. (1999). Virtue, personality, and social relations: self-control as the moral muscle. *Journal of Personality*, 67(6), 1165–1194.
- Baumeister, R. F., & Exline, J. J. (2000). Self-control, morality, and human strength. *Journal of Social and Clinical Psychology*, 19(1), 29–42. <https://doi.org/10.1521/jscp.2000.19.1.29>
- Baumeister, R. F., & Twenge, J. M. (2002). Cultural suppression of female sexuality. *Review of General Psychology*, 6(2), 166–203. <https://doi.org/10.1037//1089-2680.6.2.166>
- Beckwith, H. D., & Morrow, J. A. (2005). Sexual attitudes of college students: The impact of religiosity and spirituality. *College Student Journal*, 39(2), 357–366.
- Bellakhdar, S. (2009). La prescription de la sexualité en Islam. *Topique*, (105), 105–116.
- Bhartiya, A. (2013). Menstruation, religion and society. *International Journal of Social Science and Humanity*, 523–527. <https://doi.org/10.7763/IJSSH.2013.V3.296>
- Biardeau, M. (2009). *L'hindouisme : Anthropologie d'une civilisation*. Paris: Editions Flammarion.
- Bieke, D., & Olatunji, B. O. (2011). The effect of disgust conditioning and disgust sensitivity on appraisals of moral transgressions. *Personality and Individual Differences*, 50(7), 1142–1146. <https://doi.org/10.1016/j.paid.2011.02.004>
- Biesanz, J. C., West, S. G., & Millevoi, A. (2007). What do you learn about someone over time? The relationship between length of acquaintance and consensus and self-other

- agreement in judgments of personality. *Journal of Personality and Social Psychology*, 92(1), 119–135. <https://doi.org/10.1037/0022-3514.92.1.119>
- Birnbaum, G. E., Reis, H. T., Mikulincer, M., Gillath, O., & Orpaz, A. (2006). When sex is more than just sex: Attachment orientations, sexual experience, and relationship quality. *Journal of Personality and Social Psychology*, 91(5), 929–943. <https://doi.org/10.1037/0022-3514.91.5.929>
- Blackwell, D. L., & Lichter, D. T. (2004). Homogamy among dating, cohabiting, and married couples. *The Sociological Quarterly*, 45(4), 719–737.
- Bloch, L., Haase, C. M., & Levenson, R. W. (2014). Emotion regulation predicts marital satisfaction: More than a wives' tale. *Emotion (Washington, D.C.)*, 14(1), 130–144. <https://doi.org/10.1037/a0034272>
- Bradbury, T. N., Fincham, F. D., & Beach, S. R. H. (2000). Research on the nature and determinants of marital satisfaction: A decade in review. *Journal of Marriage and Family*, 62(4), 964–980.
- Braithwaite, S. R., Selby, E. A., & Fincham, F. D. (2011). Forgiveness and relationship satisfaction: Mediating mechanisms. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, 25(4), 551–559. <https://doi.org/10.1037/a0024526>
- Brelsford, G. M., Luquis, R., & Murray-Swank, N. A. (2011). College students' permissive sexual attitudes: Links to religiousness and spirituality. *International Journal for the Psychology of Religion*, 21(2), 127–136. <https://doi.org/10.1080/10508619.2011.557005>
- Brotto, L. A. (2010). The DSM diagnostic criteria for hypoactive sexual desire disorder in women. *Archives of Sexual Behavior*, 39(2), 221–239. <https://doi.org/10.1007/s10508-009-9543-1>
- Brotto, L. A., Chik, H. M., Ryder, A. G., Gorzalka, B. B., & Seal, B. N. (2005). Acculturation and sexual function in Asian women. *Archives of Sexual Behavior*, 34(6), 613–626. <https://doi.org/10.1007/s10508-005-7909-6>
- Brotto, L. A., Heiman, J. R., & Tolman, D. L. (2009). Narratives of desire in mid-age women with and without arousal difficulties. *Journal of Sex Research*, 46(5), 387–398. <https://doi.org/10.1080/00224490902792624>
- Brotto, L. A., & Smith, K. B. (2014). Sexual desire and pleasure. In D. L. Tolman & L. M. Diamond (Eds.), *APA Handbook of Sexuality and Psychology* (American psychological Association, Vol. volume 1: Person-based approaches, pp. 205–244). Washington, DC.
- Brotto, L. A., Woo, J. S. T., & Gorzalka, B. B. (2012). Differences in sexual guilt and desire in East Asian and Euro-Canadian men. *Journal of Sex Research*, 49(6), 594–602. <https://doi.org/10.1080/00224499.2011.618956>
- Buhi, E. R., & Goodson, P. (2007). Predictors of adolescent sexual behavior and intention: A theory-guided systematic review. *Journal of Adolescent Health*, 40(1), 4–21. <https://doi.org/10.1016/j.jadohealth.2006.09.027>
- Bullough, V. L. (2003). Masturbation: A historical overview. *Journal of Psychology & Human Sexuality*, 14(2–3), 17–33. [https://doi.org/10.1300/J056v14n02\\_03](https://doi.org/10.1300/J056v14n02_03)

- Burris, C. T., & Viscontas, T. (2012). *"Do it like no one is watching": The effect of (no) audience on religious attitudes toward sex*. Poster presented to SPSP conference, San Diego.
- Burris, J. L., Smith, G. T., & Carlson, C. R. (2009). Relations among religiousness, spirituality, and sexual practices. *Journal of Sex Research*, 46(4), 282–289. <https://doi.org/10.1080/00224490802684582>
- Busby, D. M., Willoughby, B. J., & Carroll, J. S. (2013). Sowing wild oats: Valuable experience or a field full of weeds? *Personal Relationships*, 20(4), 706–718. <https://doi.org/10.1111/pere.12009>
- Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: an evolutionary perspective on human mating. *Psychological Review*, 100(2), 204.
- Buss, D. M., & Shackelford, T. K. (1997). Susceptibility to infidelity in the first year of marriage.
- Byers, E. S. (1999). The Interpersonal Exchange Model of sexual satisfaction: Implications for sex therapy with couples. *Canadian Journal of Counselling*, 33(2), 95–111.
- Byers, E. S. (2005). Relationship satisfaction and sexual satisfaction: A longitudinal study of individuals in long-term relationships. *Journal of Sex Research*, 42(2), 113–118. <https://doi.org/10.1080/00224490509552264>
- Cado, S., & Leitenberg, H. (1990). Guilt reactions to sexual fantasies during intercourse. *Archives of Sexual Behavior*, 19(1), 49–63. <https://doi.org/10.1007/BF01541825>
- Cameron, J. S., & Dale, D. T. (2009). Different ethical standards in gain versus loss frames. In D. Decemer (Ed.), *Psychological Perspectives on Ethical Behavior and Decision Making* (pp. 91–106). Charlotte, NC: Information Age Publishing.
- Campbell, K., & Kaufman, J. (2017). Do you pursue your heart or your art? Creativity, personality, and love. *Journal of Family Issues*, 38(3), 287–311. <https://doi.org/10.1177/0192513X15570318>
- Catholic Church, & Paul VI. (1968). *Encyclical of Pope Paul VI, Humanae vitae, on the regulation of birth: And Pope Paul VI's Credo of the people of God*. Glen Rock, N.J: Paulist Press.
- Chapman, H. A., & Anderson, A. K. (2014). Trait physical disgust is related to moral judgments outside of the purity domain. *Emotion*, 14(2), 341–348. <http://dx.doi.org/10.1037/a0035120>
- Chebel, M. (2012). *L'Islam, de chair et de sang*.
- Cheung, M. W.-L., Wong, P. W.-C., Liu, K. Y., Yip, P. S.-F., Fan, S. Y., & Lam, T. (2008). A study of sexual satisfaction and frequency of sex among Hong Kong Chinese couples. *The Journal of Sex Research*, 45(2), 129–139. <https://doi.org/10.1080/00224490801987416>
- Chivers, M. L., Suschinsky, K. D., Timmers, A. D., & Bossio, J. A. (2014). Experimental, neuroimaging, and psychophysiological methods in sexuality research. In D. L. Tolman, L. M. Diamond, J. A. Bauermeister, W. H. George, J. G. Pfaus, & L. M. Ward (Eds.),

- APA handbook of sexuality and psychology, Vol. 1: Person-based approaches.* (pp. 99–119). Washington: American Psychological Association. <https://doi.org/10.1037/14193-006>
- Christopher, F. S., & Kisler, T. S. (2004). Exploring marital sexuality: Peeking inside the bedroom and discovering what we don't know--but should! In *The handbook of sexuality in close relationships* (pp. 371–384). Mahwah, NJ, US: Lawrence Erlbaum Associates Publishers.
- Claxton, S. E., & van Dulmen, M. H. M. (2013). Casual sexual relationships and experiences in emerging adulthood. *Emerging Adulthood, 1*(2), 138–150. <https://doi.org/10.1177/2167696813487181>
- Clobert, M., & Saroglou, V. (2013). Intercultural non-conscious influences: Prosocial effects of Buddhist priming on Westerners of Christian tradition. *International Journal of Intercultural Relations, 37*(4), 459–466. <https://doi.org/10.1016/j.ijintrel.2012.10.001>
- Clobert, M., Saroglou, V., & Hwang, K.-K. (2015). Buddhist concepts as implicitly reducing prejudice and increasing prosociality. *Personality and Social Psychology Bulletin, 41*(4), 513–525. <https://doi.org/10.1177/0146167215571094>
- Cochran, J. K., & Beeghley, L. (1991). The influence of religion on attitudes toward nonmarital sexuality: A preliminary assessment of reference group theory. *Journal for the Scientific Study of Religion, 30*(1), 45–62. <https://doi.org/10.2307/1387148>
- Cohen, A. B., & Rozin, P. (2001). Religion and the morality of mentality. *Journal of Personality and Social Psychology, 81*(4), 697–710. <https://doi.org/10.1037/0022-3514.81.4.697>
- Cowden, C. R., & Bradshaw, S. D. (2007). Religiosity and sexual concerns. *International Journal of Sexual Health, 19*(1), 15–24. [https://doi.org/10.1300/J514v19n01\\_03](https://doi.org/10.1300/J514v19n01_03)
- Cranney, S. (2017). Sex life satisfaction in sub-Saharan Africa: A descriptive and exploratory analysis. *Archives of Sexual Behavior, 46*(7), 1961–1972. <https://doi.org/10.1007/s10508-017-0984-7>
- Cranney, S., & Štulhofer, A. (2017). “Whosoever looketh on a person to lust after them”: Religiosity, the use of mainstream and nonmainstream sexually explicit material, and sexual satisfaction in heterosexual men and women. *The Journal of Sex Research, 54*(6), 694–705. <https://doi.org/10.1080/00224499.2016.1216068>
- Cross, C. P., Copping, L. T., & Campbell, A. (2011). Sex differences in impulsivity: a meta-analysis. *Psychological Bulletin, 137*(1), 97–130. <https://doi.org/10.1037/a0021591>
- Cummings, J. A., Clinton, S. M., Perry, A. N., Akil, H., & Becker, J. B. (2013). Male rats that differ in novelty exploration demonstrate distinct patterns of sexual behavior. *Behavioral Neuroscience, 127*(1), 47–58. <https://doi.org/10.1037/a0031528>
- Cunningham, E., Forestell, C. A., & Dickter, C. L. (2013). Induced disgust affects implicit and explicit responses toward gay men and lesbians: Disgust toward homosexual couples. *European Journal of Social Psychology, 43*(5), 362–369. <https://doi.org/10.1002/ejsp.1945>

- Cutrona, C. E., Russell, D. W., Burzette, R. G., Wesner, K. A., & Bryant, C. M. (2011). Predicting relationship stability among midlife African American couples. *Journal of Consulting and Clinical Psychology, 79*(6), 814–825. <https://doi.org/10.1037/a0025874>
- Daniélou, A., & Gabin, J.-L. (2005). *Approche de l'hindouisme*. Paris: Editions Kailash.
- David, P., & Stafford, L. (2015). A relational approach to religion and spirituality in marriage: The role of couples' religious communication in marital satisfaction. *Journal of Family Issues, 36*(2), 232–249.
- Davidson, J. K., & Darling, C. A. (1993). Masturbatory guilt and sexual responsiveness among post-college-age women: Sexual satisfaction revisited. *Journal of Sex & Marital Therapy, 19*(4), 289–300. <https://doi.org/10.1080/00926239308404372>
- Davidson, J. K., Darling, C. A., & Norton, L. (1995). Religiosity and the sexuality of women: Sexual behavior and sexual satisfaction revisited. *The Journal of Sex Research, 32*(3), 235–243. <https://doi.org/10.1080/00224499509551794>
- Davidson, J. K., & Hoffman, L. E. (1986). Sexual fantasies and sexual satisfaction: An empirical analysis of erotic thought. *The Journal of Sex Research, 22*(2), 184–205.
- Davidson, J. K., & Moore, N. B. (1994). Masturbation and premarital sexual intercourse among college women: Making choices for sexual fulfillment. *Journal of Sex & Marital Therapy, 20*(3), 178–199. <https://doi.org/10.1080/00926239408403429>
- Davidson, J. K., Moore, N. B., & Ullstrup, K. M. (2004). Religiosity and sexual responsibility: Relationships of choice. *American Journal of Health Behavior, 28*(4), 335–346.
- de Jong, D. C. (2009). The role of attention in sexual arousal: Implications for treatment of sexual dysfunction. *Journal of Sex Research, 46*(2–3), 237–248. <https://doi.org/10.1080/00224490902747230>
- de Jong, P. J., van Overveld, M., & Borg, C. (2013). Giving in to arousal or staying stuck in disgust? Disgust-based mechanisms in sex and sexual dysfunction. *Journal of Sex Research, 50*(3–4), 247–262. <https://doi.org/10.1080/00224499.2012.746280>
- de Visser, R. O., Smith, A. M. A., Richters, J., & Rissel, C. E. (2007). Associations between religiosity and sexuality in a representative sample of Australian adults. *Archives of Sexual Behavior, 36*(1), 33–46. <https://doi.org/10.1007/s10508-006-9056-0>
- Deak, C., & Saroglou, V. (2015). Opposing abortion, gay adoption, euthanasia, and suicide: Compassionate openness or self-centered moral rigorism? *Archive for the Psychology of Religion, 37*(3), 267.
- Deboosere, P., Marquet, J., & Moltemans, D. (2012). La famille: Conceptions actuelles du couple, de la famille, du genre, et de la solidarité familiale. In L. Voyé, K. Dobbelaere, & K. Abts (Eds.), *Autres temps, autres mœurs* (pp. 23–70). Brussels, Belgium: Racine.
- del Mar Sánchez-Fuentes, M., Santos-Iglesias, P., & Sierra, J. C. (2014). A systematic review of sexual satisfaction. *International Journal of Clinical and Health Psychology, 14*(1), 67–75.

- DeLamater, J., & MacCorquodale, P. (1979). *Premarital sexuality: Attitudes, relationships, behavior*. Madison: University of Wisconsin Press.
- Demoulin, S., Saroglou, V., & Van Pachterbeke, M. (2008). Infra-humanizing others, supra-humanizing gods: The emotional hierarchy. *Social Cognition*, 26(2), 235.
- Denison, B. J. (1998). Sexuality and fertility. In W. H. Swatos (Ed.), *Encyclopedia of Religion and Society* (AltaMira Press, pp. 464–465).
- Dialmy, A. (2010). Sexuality and Islam. *European Journal of Contraception & Reproductive Health Care*, 15(3), 160–168. <https://doi.org/10.3109/13625181003793339>
- Diekmann, A. B., & Eagly, A. H. (2000). Stereotypes as dynamic constructs: Women and men of the past, present, and future. *Personality and Social Psychology Bulletin*, 26(10), 1171–1188. <https://doi.org/10.1177/0146167200262001>
- Diener, E., Tay, L., & Myers, D. G. (2011). The religion paradox: if religion makes people happy, why are so many dropping out? *Journal of Personality and Social Psychology*, 101(6), 1278–1290. <https://doi.org/10.1037/a0024402>
- Dillon, M. M. (2007). Age, generation, and cohort in American religion and spirituality. In *The SAGE Handbook of the sociology of religion* (pp. 526–546). London: SAGE Publications Ltd. <https://doi.org/10.4135/9781848607965>
- Doebler, S. (2015). Relationships between religion and two forms of homonegativity in Europe—A multilevel analysis of effects of believing, belonging and religious practice. *PLoS ONE*, 10(8).
- Dogan, S. J., Stockdale, G. D., Widaman, K. F., & Conger, R. D. (2010). Developmental relations and patterns of change between alcohol use and number of sexual partners from adolescence through adulthood. *Developmental Psychology*, 46(6), 1747–1759. <http://dx.doi.org/10.1037/a0019655>
- Dollahite, D. C., & Lambert, N. M. (2007). Forsaking all others: How religious involvement promotes marital fidelity in Christian, Jewish, and Muslim couples. *Review of Religious Research*, 48(3), 290–307.
- Donaldson, C. D., Handren, L. M., & Lac, A. (2017). Applying multilevel modeling to understand individual and cross-cultural variations in attitudes toward homosexual people across 28 European countries. *Journal of Cross-Cultural Psychology*, 48(1), 93–112. <https://doi.org/10.1177/0022022116672488>
- Dufner, M., Rauthmann, J. F., Czarna, A. Z., & Denissen, J. J. A. (2013). Are narcissists sexy? Zeroing in on the effect of narcissism on short-term mate appeal. *Personality & Social Psychology Bulletin*, 39(7), 870–882. <https://doi.org/10.1177/0146167213483580>
- Eagly, A. H. (1987). Sex differences in social behavior: A Social-Role interpretation. *Contemporary Sociology*, 18(3), 343. <https://doi.org/10.2307/2073813>
- Eagly, A. H., & Chaiken, S. (2007). The advantages of an inclusive definition of attitude. *Social Cognition*, 25(5), 582–602. <https://doi.org/10.1521/soco.2007.25.5.582>
- Ekman, P. (1992). An argument for basic emotions. *Cognition and Emotion*, 6, 168–200.

- Ellison, C. G., Henderson, A. K., Glenn, N. D., & Harkrider, K. E. (2011). Sanctification, stress, and marital quality. *Family Relations*, 60(4), 404–420. <https://doi.org/10.1111/j.1741-3729.2011.00658.x>
- Ellison, D. M. (2011). Religious negativism and fantasy guilt. *The Family Journal*, 19(1), 101–107. <https://doi.org/10.1177/1066480710388754>
- Emmers-Sommer, T. M., Allen, M., Kohler, K. V., & Burrell, N. (2017). Implications of sex guilt: A meta-analysis. *Marriage & Family Review*, 54(5), 417–437. <https://doi.org/10.1080/01494929.2017.1359815>
- Emmons, R. A. (1999). Religion in the psychology of personality: An introduction. *Journal of Personality*, 67(6), 873–888.
- Engel, G. L. (1981). The clinical application of the Biopsychosocial Model. *The Journal of Medicine and Philosophy: A Forum for Bioethics and Philosophy of Medicine*, 6(2), 101–124. <https://doi.org/10.1093/jmp/6.2.101>
- Epstein, M., Bailey, J. A., Manhart, L. E., Hill, K. G., Hawkins, J. D., Haggerty, K. P., & Catalano, R. F. (2014). Understanding the link between early sexual initiation and later sexually transmitted infection: Test and replication in two longitudinal studies. *Journal of Adolescent Health*, 54(4), 435–441.e2. <https://doi.org/10.1016/j.jadohealth.2013.09.016>
- Eskine, K. J., Kacirik, N. A., & Prinz, J. J. (2011). A bad taste in the mouth: Gustatory disgust influences moral judgment. *Psychological Science*, 22(3), 295–299. <https://doi.org/10.1177/0956797611398497>
- Everaerd, W. (1989). Commentary on sex research: Sex as an emotion. *Journal of Psychology & Human Sexuality*, 1(2), 3–15. [https://doi.org/10.1300/J056v01n02\\_02](https://doi.org/10.1300/J056v01n02_02)
- Farmer, M. A., Trapnell, P. D., & Meston, C. M. (2009). The relation between sexual behavior and religiosity subtypes: A test of the secularization hypothesis. *Archives of Sexual Behavior*, 38(5), 852–865. <https://doi.org/10.1007/s10508-008-9407-0>
- Fellows, K. J., Chiu, H.-Y., Hill, E. J., & Hawkins, A. J. (2016). Work–family conflict and couple relationship quality: A meta-analytic study. *Journal of Family and Economic Issues*, 37(4), 509–518. <https://doi.org/10.1007/s10834-015-9450-7>
- Fincham, F. D., & Beach, S. R. H. (2010). Marriage in the New Millennium: A decade in review. *Journal of Marriage and Family*, 72(3), 630–649.
- Fincham, F. D., & Bradbury, T. N. (1992). Assessing attributions in marriage: The Relationship Attribution Measure. *Journal of Personality and Social Psychology*, 62(3), 457–468. <https://doi.org/10.1037/0022-3514.62.3.457>
- Fincham, F. D., Lambert, N. M., & Beach, S. R. (2010). Faith and unfaithfulness: Can praying for your partner reduce infidelity? *Journal of Personality and Social Psychology*, 99(4), 649.
- Fincham, F. D., Stanley, S. M., & Beach, S. R. H. (2007). Transformative processes in marriage: An analysis of emerging trends. *Journal of Marriage and the Family*, 69(2), 275–292. <https://doi.org/10.1111/j.1741-3737.2007.00362.x>

- Fincher, C. L., & Thornhill, R. (2012). Parasite-stress promotes in-group assortative sociality: the cases of strong family ties and heightened religiosity. *The Behavioral and Brain Sciences*, 35(2), 61–79. <https://doi.org/10.1017/S0140525X11000021>
- Finke, R., & Adamczyk, A. (2008). Cross-national moral beliefs: The influence of national religious context. *The Sociological Quarterly*, 49(4), 617–652. <https://doi.org/10.1111/j.1533-8525.2008.00130.x>
- Fishbein, M. (1966). The relationships between beliefs, attitudes and behavior. *Cognitive Consistency, Motivational Antecedents and Behavioral Consequents*, 199–223.
- Fowers, B. J., & Olson, D. H. (1993). ENRICH Marital Satisfaction Scale: A brief research and clinical tool. *Journal of Family Psychology*, 7(2), 176–185.
- Francis, L. J., & Penny, G. (2014). Gender differences in religion. In V. Saroglou (Ed.), *Religion, personality, and social behavior* (pp. 313–337). New York: Psychology Press.
- Frederick, D. A., Lever, J., Gillespie, B. J., & Garcia, J. R. (2017). What Keeps Passion Alive? Sexual Satisfaction Is Associated With Sexual Communication, Mood Setting, Sexual Variety, Oral Sex, Orgasm, and Sex Frequency in a National U.S. Study. *The Journal of Sex Research*, 54(2), 186–201. <https://doi.org/10.1080/00224499.2015.1137854>
- Fredrickson, B. L. (2013). Positive emotions broaden and build. In P. Devine & A. Plant (Eds.), *Advances in Experimental Social Psychology* (Vol. 47, pp. 1–53). Academic Press. <https://doi.org/10.1016/B978-0-12-407236-7.00001-2>
- Freud, S. (1921). Group psychology and the analysis of the Ego. In J. Strachey (Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 18, pp. 65–143). London, UK: Hogarth Press.
- Freud, S. (1927). *The future of an illusion*. (J. Strachey, Trans.). New York, NY: Norton.
- Gagnon, S. (1990). *Plaisir d'amour et crainte de Dieu: sexualité et confession au Bas-Canada*. Presses Université Laval.
- Galen, L. W. (2012). Does religious belief promote prosociality? A critical examination. *Psychological Bulletin*, 138(5), 876–906. <https://doi.org/10.1037/a0028251>
- Gebauer, J. E., Sedikides, C., Schönbrodt, F. D., Bleidorn, W., Rentfrow, P. J., Potter, J., & Gosling, S. D. (2017). The religiosity as social value hypothesis: A multi-method replication and extension across 65 countries and three levels of spatial aggregation. *Journal of Personality and Social Psychology*, 113(3), e18–e39. <https://doi.org/10.1037/pspp0000104>
- Géonet, M., De Sutter, P., & Zech, E. (2013). Les facteurs cognitifs dans le désir sexuel hypoactif féminin. *Sexologies*, 22(1), 10–18. <https://doi.org/10.1016/j.sexol.2012.01.006>
- Georgas, J., van de Vijver, F. J. R., & Berry, J. W. (2004). The ecocultural framework, ecosocial indices, and psychological variables in cross-cultural research. *Journal of Cross-Cultural Psychology*, 35(1), 74–96. <https://doi.org/10.1177/0022022103260459>
- Giglio, J. (1993). The impact of patients' and therapists' religious values on psychotherapy. *Hospital & Community Psychiatry*, 44(8), 768–771.

- Gil, V. E. (1990). Sexual fantasy experiences and guilt among conservative Christians: An exploratory study. *The Journal of Sex Research*, 27(4), 629–638. <https://doi.org/10.1080/00224499009551584>
- Gillath, O., Mikulincer, M., Birnbaum, G. E., & Shaver, P. R. (2008). When sex primes love: Subliminal sexual priming motivates relationship goal pursuit. *Personality and Social Psychology Bulletin*, 34(8), 1057–1069. <https://doi.org/10.1177/0146167208318141>
- Graham, J., & Haidt, J. (2010). Beyond beliefs: Religions bind individuals into moral communities. *Personality and Social Psychology Review*, 14(1), 140–150. <https://doi.org/10.1177/1088868309353415>
- Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, 96(5), 1029–1046. <https://doi.org/10.1037/a0015141>
- Graham, Jesse, Nosek, B. A., Haidt, J., Iyer, R., Koleva, S., & Ditto, P. H. (2011). Mapping the moral domain. *Journal of Personality and Social Psychology*, 101(2), 366–385. <https://doi.org/10.1037/a0021847>
- Granqvist, P., Mikulincer, M., & Shaver, P. R. (2010). Religion as attachment: normative processes and individual differences. *Personality and Social Psychology Review: An Official Journal of the Society for Personality and Social Psychology, Inc*, 14(1), 49–59. <https://doi.org/10.1177/1088868309348618>
- Grasmick, H. G., Bursik, R. J., & Cochran, J. K. (1991). “Render unto Caesar what is Caesar’s”: Religiosity and taxpayers’ inclinations to cheat. *The Sociological Quarterly*, 32(2), 251–266.
- Gray, P. B. (2013). Evolution and human sexuality. *American Journal of Physical Anthropology*, 152(S57), 94–118. <https://doi.org/10.1002/ajpa.22394>
- Greeley, A. (1994). Marital infidelity. *Society*, 31(4), 9–13.
- Greiling, H., & Buss, D. M. (2000). Women’s sexual strategies: the hidden dimension of extra-pair mating. *Personality and Individual Differences*, 28(5), 929–963. [https://doi.org/10.1016/S0191-8869\(99\)00151-8](https://doi.org/10.1016/S0191-8869(99)00151-8)
- Griswold, C. (2007). *Forgiveness: A philosophical exploration* (Cambridge University Press).
- Grubbs, J. B., Exline, J. J., Pargament, K. I., Hook, J. N., & Carlisle, R. D. (2015). Transgression as addiction: Religiosity and moral disapproval as predictors of perceived addiction to pornography. *Archives of Sexual Behavior*, 44(1), 125–136. <https://doi.org/10.1007/s10508-013-0257-z>
- Grubbs, J. B., Exline, J. J., Pargament, K. I., Volk, F., & Lindberg, M. J. (2017). Internet pornography use, perceived addiction, and religious/spiritual struggles. *Archives of Sexual Behavior*, 46(6), 1733–1745. <https://doi.org/10.1007/s10508-016-0772-9>
- Gunderson, M. P., & McCary, J. L. (1979). Sexual guilt and religion. *The Family Coordinator*, 28(3), 353. <https://doi.org/10.2307/581948>

- Gurrentz, B. T. (2017). Religious dynamics and marital dissolution: A latent class approach. *Marriage & Family Review*, 53(2), 185–205. <https://doi.org/10.1080/01494929.2016.1184213>
- Gutiérrez, R. A. (2012). Islam and sexuality. *Social Identities*, 18(2), 155–159. <https://doi.org/10.1080/13504630.2012.652840>
- Haavio-Mannila, E., & Kontula, O. (1997). Correlates of increased sexual satisfaction. *Archives of Sexual Behavior*, 26(4), 399–419.
- Hackathorn, J. M., Ashdown, B. K., & Rife, S. C. (2016). The sacred bed: Sex guilt mediates religiosity and satisfaction for unmarried people. *Sexuality & Culture*, 20(1), 153–172. <https://doi.org/10.1007/s12119-015-9315-0>
- Haidt, J. (2003). The moral emotions. In J. K. Davidson & H. H. Goldsmith (Eds.), *Handbook of affective sciences* (Oxford University Press, pp. 852–870). Oxford.
- Haidt, Jonathan, McCauley, C., & Rozin, P. (1994). Individual differences in sensitivity to disgust: A scale sampling seven domains of disgust elicitors. *Personality and Individual Differences*, 16(5), 701–713.
- Halpern, C. T., Waller, M. W., Spriggs, A., & Hallfors, D. D. (2006). Adolescent predictors of emerging adult sexual patterns. *Journal of Adolescent Health*, 39(6), 926.e1-926.e10. <https://doi.org/10.1016/j.jadohealth.2006.08.005>
- Halwani, R. (2007). *Sex and ethics: Essays on sexuality, virtue, and the good life*. Palgrave Macmillan UK.
- Hardy, S. A., & Raffaelli, M. (2003). Adolescent religiosity and sexuality: an investigation of reciprocal influences. *Journal of Adolescence*, 26(6), 731–739. <https://doi.org/10.1016/j.adolescence.2003.09.003>
- Hardy, S. A., & Willoughby, B. J. (2017). Religiosity and chastity among single young adults and married adults. *Psychology of Religion and Spirituality*, 9(3), 285–295. <https://doi.org/10.1037/rel0000112>
- Havermans, N., & Hooghe, M. (2011). Kerkpraktijk in België: Resultaten van de zondagstelling in oktober 2009. Retrieved from <https://lirias.kuleuven.be/handle/123456789/291651>
- Hazan, C., & Zeifman, D. (1994). Sex and the psychological tether. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships, Vol. 5. Attachment processes in adulthood* (pp. 151–178). London, England: Jessica Kingsley Publishers.
- Helm, H. W., McBride, D. C., Knox, D., & Zusman, M. (2009). The Influence of a Conservative Religion On Premarital Sexual Behavior of University Students. *North American Journal of Psychology*, 11(2).
- Henderson, A. K., Ellison, C. G., & Glenn, N. D. (2018). Religion and relationship quality among cohabiting and dating couples. *Journal of Family Issues*, 39(7), 1904–1932. <https://doi.org/10.1177/0192513X17728982>

- Henderson-King, D. H., & Veroff, J. (1994). Sexual satisfaction and marital well-being in the first years of marriage. *Journal of Social and Personal Relationships*, 11(4), 509–534. <https://doi.org/10.1177/0265407594114002>
- Herbenick, D., Reece, M., Schick, V., Sanders, S. A., Dodge, B., & Fortenberry, J. D. (2010). Sexual behavior in the United States: results from a national probability sample of men and women ages 14–94. *The Journal of Sexual Medicine*, 7, 255–265. <https://doi.org/10.1111/j.1743-6109.2010.02012.x>
- Hernandez, K. M., Mahoney, A., & Pargament, K. I. (2014). Sexuality and religion. In D. L. Tolman & L. M. Diamond (Eds.), *APA Handbook of sexuality and psychology Vol. 2: Contextual approaches* (American Psychological Association, pp. 425–447). Washington, DC.
- Hernandez, Krystal M., Mahoney, A., & Pargament, K. I. (2011). Sanctification of sexuality: Implications for newlyweds' marital and sexual quality. *Journal of Family Psychology*, 25(5), 775–780. <https://doi.org/10.1037/a0025103>
- Hernandez-Kane, K. M., & Mahoney, A. (2018). Sex through a sacred lens: Longitudinal effects of sanctification of marital sexuality. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*. <https://doi.org/10.1037/fam0000392>
- Hicks, T. V., & Leitenberg, H. (2001). Sexual fantasies about one's partner versus someone else: Gender differences in incidence and frequency. *The Journal of Sex Research*, 38(1), 43–50.
- Higgins, J. A., Trussell, J., Moore, N. B., & Davidson, J. K. (2010). Virginity lost, satisfaction gained? Physiological and psychological sexual satisfaction at heterosexual debut. *Journal of Sex Research*, 47(4), 384–394. <https://doi.org/10.1080/00224491003774792>
- Hipwell, A. E., Keenan, K., Loeber, R., & Battista, D. (2010). Early predictors of sexually intimate behaviors in an urban sample of young girls. *Developmental Psychology*, 46(2), 366–378. <https://doi.org/10.1037/a0018409>
- Hoffarth, M. R., Hodson, G., & Molnar, D. S. (2017). When and why is religious attendance associated with antigay bias and gay rights opposition? A justification-suppression model approach. *Journal of Personality and Social Psychology*. <https://doi.org/10.1037/pspp0000146>
- Holder, D. W., DuRant, R. H., Harris, T. L., Daniel, J. H., Obeidallah, D., & Goodman, E. (2000). The association between adolescent spirituality and voluntary sexual activity. *Journal of Adolescent Health*, 26(4), 295–302.
- Hook, J. N., Farrell, J. E., Ramos, M. J., Davis, D. E., Karaga, S., Van Tongeren, D. R., & Grubbs, J. B. (2015). Religiousness and congruence between sexual values and behavior. *Journal of Psychology and Christianity*, 34, 179–188.
- Horberg, E. J., Oveis, C., Keltner, D., & Cohen, A. B. (2009). Disgust and the moralization of purity. *Journal of Personality and Social Psychology*, 97(6), 963–976. <https://doi.org/10.1037/a0017423>

- Hull, S. J., Hennessy, M., Bleakley, A., Fishbein, M., & Jordan, A. (2011). Identifying the causal pathways from religiosity to delayed adolescent sexual behavior. *Journal of Sex Research, 48*(6), 543–553. <https://doi.org/10.1080/00224499.2010.521868>
- Hunsberger, B., & Jackson, L. M. (2005). Religion, meaning, and prejudice. *Journal of Social Issues, 61*(4), 807–826. <https://doi.org/10.1111/j.1540-4560.2005.00433.x>
- Hunt, S., & Yip, A. K. T. (Eds.). (2012). *The Ashgate research companion to contemporary religion and sexuality*. Farnham, Surrey, England ; Burlington, VT: Ashgate.
- Hurlbert, D. F., & Apt, C. (1993). Female sexuality: A comparative study between women in homosexual and heterosexual relationships. *Journal of Sex & Marital Therapy, 19*(4), 315–327. <https://doi.org/10.1080/00926239308404375>
- Imhoff, R., & Schmidt, A. F. (2014). Sexual disinhibition under sexual arousal: Evidence for domain specificity in men and women. *Archives of Sexual Behavior, 43*(6), 1123–1136. <https://doi.org/10.1007/s10508-014-0329-8>
- Inbar, Y., Pizarro, D. A., & Bloom, P. (2009). Conservatives are more easily disgusted than liberals. *Cognition & Emotion, 23*(4), 714–725. <https://doi.org/10.1080/02699930802110007>
- Inbar, Y., Pizarro, D. A., & Bloom, P. (2012). Disgusting smells cause decreased liking of gay men. *Emotion, 12*(1), 23–27. <https://doi.org/10.1037/a0023984>
- Inbar, Y., Pizarro, D. A., Knobe, J., & Bloom, P. (2009). Disgust sensitivity predicts intuitive disapproval of gays. *Emotion, 9*(3), 435–439. <https://doi.org/10.1037/a0015960>
- India, W. M. (1863). *The Indian Penal Code (Act XLV of 1860): With Notes*. Hay. Retrieved from <http://archive.org/details/indianpenalcode00macpgoog>
- Inglehart, R., & Welzel, C. (2005). *Modernization, cultural change, and democracy: The human development sequence*. Cambridge University Press.
- Institut Montaigne. (2016). *A french islam is possible*. Retrieved from [https://web.archive.org/web/20170915201551if\\_/http://www.institutmontaigne.org/res/files/publications/a-french-islam-is-possible-report.pdf](https://web.archive.org/web/20170915201551if_/http://www.institutmontaigne.org/res/files/publications/a-french-islam-is-possible-report.pdf)
- Irvine, J. M. (2004). *Talk about sex: The battles over sex education in the United States*. University of California Press.
- Iveniuk, J., O'Muircheartaigh, C., & Cagney, K. A. (2016). Religious influence on older Americans' sexual lives: A nationally-representative profile. *Archives of Sexual Behavior, 45*(1), 121–131. <https://doi.org/10.1007/s10508-015-0534-0>
- Jaccard, J., & Dittus, P. (1991). *Parent-teen communication: toward the prevention of unintended pregnancies*. New York: Springer-Verlag.
- James, W. (1902). *The varieties of religious experience: A study in human nature*. Longmans.
- Janda, L., & Bazemore, S. (2011). The revised Mosher sex-guilt scale: Its psychometric properties and a proposed Ten-Item version. *Journal of Sex Research, 48*(4), 392–396. <https://doi.org/10.1080/00224499.2010.482216>

- 
- Janus, S. S., & Janus, C. L. (1993). *The Janus report on sexual behavior*.
- Jones, W. H., Moore, D. S., Schratter, A., & Negel, L. A. (2001). Interpersonal transgressions and betrayals. In *Behaving badly: Aversive behaviors in interpersonal relationships* (pp. 233–256). Washington, DC, US: American Psychological Association.
- Joseph, S., & Najmabadi, A. (Eds.). (2003). *Encyclopedia of women & Islamic cultures*. Leiden ; Boston, Mass: Brill.
- Jung, J. H. (2016). A cross-national analysis of religion and attitudes toward premarital sex: do economic contexts matter? *Sociological Perspectives*, 59(4), 798–817. <https://doi.org/10.1177/0731121415595428>
- Kadri, N., Alami, K. H. M., & Tahiri, S. M. (2002). Sexual dysfunction in women: population based epidemiological study. *Archives of Women's Mental Health*, 5(2), 59–63. <https://doi.org/10.1007/s00737-002-0141-7>
- Kadri, N., Berrada, S., Alami, K. M., Manoudi, F., Rachidi, L., Maftouh, S., & Halbreich, U. (2007). Mental health of Moroccan women, a sexual perspective. *Journal of Affective Disorders*, 102(1–3), 199–207. <https://doi.org/10.1016/j.jad.2006.09.028>
- Kahr, B. (2009). *Who's been sleeping in your head: The secret world of sexual fantasies*. Basic Books.
- Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: a review of theory, method, and research. *Psychological Bulletin*, 118(1), 3–34.
- Kashdan, T. B., & Nezlek, J. B. (2012). Whether, when, and how is spirituality related to well-being? Moving beyond single occasion questionnaires to understanding daily process. *Personality & Social Psychology Bulletin*, 38(11), 1523–1535. <https://doi.org/10.1177/0146167212454549>
- Kelman, H. C. (1974). Attitudes are alive and well and gainfully employed in the sphere of action. *American Psychologist*, 29(5), 310–324. <http://dx.doi.org/10.1037/h0037623>
- Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic Data Analysis*. Guilford Press.
- Khurana, A., Romer, D., Betancourt, L. . M., Brodsky, N. L., Giannetta, J. M., & Hurt, H. (2012). Working memory ability predicts trajectories of early alcohol use in adolescents: the mediational role of impulsivity. *Addiction*, 108(3), 506–515. <https://doi.org/10.1111/add.12001>
- Kirk, R. E. (1982). *Experimental design*. John Wiley & Sons, Inc.
- Kirkpatrick, L. A. (2005). *Attachment, evolution, and the psychology of religion*. Guilford Press.
- Kleinke, C. I. (1978). *Self-perception: The psychology of personal awareness*. WH Freeman & Co.
- Knabb, J. J. (2014). A preliminary investigation of the relationship between religion and marital adjustment among Christian adults from a conservative denomination. *Journal of Psychology and Christianity*, 33(3), 263–276.

- Koukounas, E., & McCabe, M. P. (2001). Sexual and emotional variables influencing sexual response to erotica: A psychophysiological investigation. *Archives of Sexual Behavior*, 16.
- Kroll, J., & Egan, E. (2004). Psychiatry, moral worry, and the moral emotions. *Journal of Psychiatric Practice*, 10(6), 352.
- Krosnick, J. A., Judd, C. M., & Wittenbrink, B. (2005). The measurement of attitudes. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *Handbook of attitudes and attitude change*. Mahwah, NJ: Erlbaum.
- LaBouff, J. P. (2011). *The ecological validity of priming religiousness: context and culture*.
- LaBouff, J. P., Rowatt, W. C., Johnson, M. K., & Finkle, C. (2012). Differences in attitudes toward outgroups in religious and nonreligious contexts in a multinational sample: A situational context priming study. *International Journal for the Psychology of Religion*, 22(1), 1–9. <https://doi.org/10.1080/10508619.2012.634778>
- Lambert, N. M., & Dollahite, D. C. (2006). How religiosity helps couples prevent, resolve, and overcome marital conflict. *Family Relations*, 55(4), 439–449.
- Lambert, N. M., & Dollahite, D. C. (2010). Development of the Faith Activities in the Home Scale (FAITHS). *Journal of Family Issues*, 31(11), 1442–1464. <https://doi.org/10.1177/0192513X10363798>
- Laumann, E. O. (1994). *The social organization of sexuality: Sexual practices in the United States*. University of Chicago Press.
- Laurin, K., Kay, A. C., & Fitzsimons, G. M. (2012). Divergent effects of activating thoughts of God on self-regulation. *Journal of Personality and Social Psychology*, 102(1), 4–21. <https://doi.org/10.1037/a0025971>
- Lavner, J. A., Karney, B. R., & Bradbury, T. N. (2016). Does couples' communication predict marital satisfaction, or does marital satisfaction predict communication? *Journal of Marriage and Family*, 78(3), 680–694. <https://doi.org/10.1111/jomf.12301>
- Lawrance, K.-A., & Byers, E. S. (1995). Sexual satisfaction in long-term heterosexual relationships: The interpersonal exchange model of sexual satisfaction. *Personal Relationships*.
- Lazar, A. (2016). Moderating effects of religiousness and marriage duration on the relation between sexual and marital satisfaction among Jewish women. *Archives of Sexual Behavior*, 1–11. <https://doi.org/10.1007/s10508-016-0847-7>
- Le Gall, A., Mullet, E., & Rivière Shafighi, S. (2002). Age, religious beliefs, and sexual attitudes. *Journal of Sex Research*, 39(3), 207–216. <https://doi.org/10.1080/00224490209552143>
- Lee, E. M., Ambler, J. K., & Sagarin, B. J. (2014). Effects of subjective sexual arousal on sexual, pathogen, and moral disgust sensitivity in women and men. *Archives of Sexual Behavior*, 43(6), 1115–1121. <https://doi.org/10.1007/s10508-014-0271-9>
- Lee, S. W. S., & Schwarz, N. (2010). Dirty hands and dirty mouths: Embodiment of the moral-purity metaphor is specific to the motor modality involved in moral

- transgression. *Psychological Science*, 21(10), 1423–1425. <https://doi.org/10.1177/0956797610382788>
- Lefkowitz, E. S., Gillen, M. M., Shearer, C. L., & Boone, T. L. (2004). Religiosity, sexual behaviors, and sexual attitudes during emerging adulthood. *The Journal of Sex Research*, 41(2), 150–159. <https://doi.org/10.1080/00224490409552223>
- Lehmiller, J. J. (2014). *The psychology of human sexuality*. Chichester, West Sussex: Wiley Blackwell.
- Lehmiller, J. J., & Agnew, C. R. (2006). Marginalized relationships: The impact of social disapproval on romantic relationship commitment. *Personality and Social Psychology Bulletin*, 32(1), 40–51. <https://doi.org/10.1177/0146167205278710>
- Lehmiller, J. J., Law, A. T., & Tormala, T. T. (2010). The effect of self-affirmation on sexual prejudice. *Journal of Experimental Social Psychology*, 46(2), 276–285. <https://doi.org/10.1016/j.jesp.2009.11.009>
- Lehmiller, J. J., VanderDrift, L. E., & Kelly, J. R. (2011). Sex differences in approaching friends with benefits relationships. *The Journal of Sex Research*, 48(2–3), 275–284. <https://doi.org/10.1080/00224491003721694>
- Leiblum, S., Wiegel, M., & Brickle, F. (2003). Sexual attitudes of US and Canadian medical students: the role of ethnicity, gender, religion and acculturation. *Sexual and Relationship Therapy*, 18(4), 473–491. <https://doi.org/10.1080/14681990310001609813>
- Leitenberg, H., & Henning, K. (1995). Sexual fantasy. *Psychological Bulletin*, 117(3), 469–496. <https://doi.org/10.1037/0033-2909.117.3.469>
- Leveque, H. R., & Pedersen, C. L. (2012). Emerging adulthood: An age of sexual experimentation or sexual self-focus? *The Canadian Journal of Human Sexuality, Vol. 21 (3-4) 2012*, 21(3–4), 147–159.
- Lewis, M. (2000). The self-conscious emotions. *Emotions*, 742.
- Li, T., & Fung, H. H. (2011). The dynamic goal theory of marital satisfaction. *Review of General Psychology*, 15(3), 246–254. <https://doi.org/10.1037/a0024694>
- Li, Y. J., & Cohen, A. B. (2014). Religion, sexuality, and family. In V. Saroglou (Ed.), *Religion, personality, and social behavior* (Psychology Press., pp. 213–229). New York, NY.
- Li, Y. J., Cohen, A. B., Weeden, J., & Kenrick, D. T. (2010). Mating competitors increase religious beliefs. *Journal of Experimental Social Psychology*, 46(2), 428–431. <https://doi.org/10.1016/j.jesp.2009.10.017>
- Liljenquist, K., Zhong, C.-B., & Galinsky, A. D. (2010). The smell of virtue: Clean scents promote reciprocity and charity. *Psychological Science*, 21(3), 381–383. <https://doi.org/10.1177/0956797610361426>
- Lippa, R. A. (2009). Sex differences in sex drive, sociosexuality, and height across 53 nations: Testing evolutionary and social structural theories. *Archives of Sexual Behavior*, 38(5), 631–651.

- Litzinger, S., & Gordon, K. C. (2005). Exploring relationships among communication, sexual satisfaction, and marital satisfaction. *Journal of Sex & Marital Therapy*, 31(5), 409–424. <https://doi.org/10.1080/00926230591006719>
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, 65(3), 272–292.
- Lopez, J. L., Riggs, S. A., Pollard, S. E., & Hook, J. N. (2011). Religious commitment, adult attachment, and marital adjustment in newly married couples. *Journal of Family Psychology: JFP: Journal of the Division of Family Psychology of the American Psychological Association (Division 43)*, 25(2), 301–309. <https://doi.org/10.1037/a0022943>
- Lucero, S. M., Pargament, K. I., Mahoney, A., & DeMaris, A. (2013). Links between religious and spiritual coping and adjustment among fathers and mothers during first pregnancy. *Journal of Reproductive and Infant Psychology*, 31(3), 309–322. <https://doi.org/10.1080/02646838.2013.798864>
- Luquis, R. R., Brelsford, G. M., & Rojas-Guyler, L. (2011). Religiosity, spirituality, sexual attitudes, and sexual behaviors among college students. *Journal of Religion and Health*, 51(3), 601–614. <https://doi.org/10.1007/s10943-011-9527-z>
- Macapagal, K. R., Janssen, E., Fridberg, D. J., Finn, P. R., & Heiman, J. R. (2011). The effects of impulsivity, sexual arousability, and abstract intellectual ability on men's and women's go/no-go task performance. *Archives of Sexual Behavior*, 40(5), 995–1006. <https://doi.org/10.1007/s10508-010-9676-2>
- Machacek, D. W., & Wilcox, M. M. (2003). *Sexuality and the World's Religions*. ABC-CLIO.
- MacNeil, S., & Byers, E. S. (2005). Dyadic assessment of sexual self-disclosure and sexual satisfaction in heterosexual dating couples, Dyadic assessment of sexual self-disclosure and sexual satisfaction in heterosexual dating couples. *Journal of Social and Personal Relationships*, 22(2), 169–181. <https://doi.org/10.1177/0265407505050942>
- Mahoney, A. (2010). Religion in families 1999 to 2009: A relational spirituality framework. *Journal of Marriage and the Family*, 72(4), 805–827. <https://doi.org/10.1111/j.1741-3737.2010.00732.x>
- Mahoney, A., Pargament, K. I., Tarakeshwar, N., & Swank, A. B. (2001). Religion in the home in the 1980s and 1990s: A meta-analytic review and conceptual analysis of links between religion, marriage, and parenting. *Journal of Family Psychology*, 15(4), 559–596. <https://doi.org/10.1037//0893-3200.15.4.559>
- Malka, A. (2014). Religion and domestic political attitudes around the world. In V. Saroglou (Ed.), *Religion, Personality, and Social Behavior* (pp. 230–254). Psychology Press.
- Mavor, K. I., & Gallois, C. (2008). Social group and moral orientation factors as mediators of religiosity and multiple attitude targets. *Journal for the Scientific Study of Religion*, 47(3), 361–377.

- McClendon, D. (2016). Religion, marriage markets, and assortative mating in the United States. *Journal of Marriage and the Family*, 78(5), 1399–1421. <https://doi.org/10.1111/jomf.12353>
- McCullough, M. E., & Carter, E. C. (2013). Religion, self-control, and self-regulation: How and why are they related. In *APA handbook of psychology, religion, and spirituality* (Vol. 1, pp. 123–138).
- McCullough, M. E., Carter, E. C., DeWall, C. N., & Corrales, C. M. (2012). Religious cognition down-regulates sexually selected, characteristically male behaviors in men, but not in women. *Evolution and Human Behavior*, 33(5), 562–568. <https://doi.org/10.1016/j.evolhumbehav.2012.02.004>
- McCullough, M. E., & Laurenceau, J.-P. (2005). Religiousness and the trajectory of self-rated health across adulthood. *Personality & Social Psychology Bulletin*, 31(4), 560–573. <https://doi.org/10.1177/0146167204271657>
- McCullough, M. E., & Willoughby, B. L. B. (2009). Religion, self-regulation, and self-control: Associations, explanations, and implications. *Psychological Bulletin*, 135(1), 69–93. <https://doi.org/10.1037/a0014213>
- McFarland, M. J., Uecker, J. E., & Regnerus, M. D. (2011). The role of religion in shaping sexual frequency and satisfaction: Evidence from married and unmarried older adults. *Journal of Sex Research*, 48(2–3), 297–308. <https://doi.org/10.1080/00224491003739993>
- Meier, A. M. (2003). Adolescents' transition to first intercourse, religiosity, and attitudes about sex. *Social Forces*, 81(3), 1031–1052.
- Meng, X., Rosenthal, R., & Rubin, D. B. (1992). Comparing correlated correlation coefficients. *Psychological Bulletin*, 111(1), 172–175. <https://doi.org/10.1037/0033-2909.111.1.172>
- Meston, C. M., & Buss, D. M. (2007). Why humans have sex. *Archives of Sexual Behavior*, 36(4), 477–507. <https://doi.org/10.1007/s10508-007-9175-2>
- Meston, C. M., Heiman, J. R., Trapnell, P. D., & Paulhus, D. L. (1998). Socially desirable responding and sexuality self-reports. *Journal of Sex Research*, 35(2), 148–157. <https://doi.org/10.1080/00224499809551928>
- Mirgain, S. A., & Cordova, J. V. (2007). Emotion skills and marital health: The association between observed and self-reported emotion skills, intimacy, and marital satisfaction. *Journal of Social and Clinical Psychology*, 26(9), 983–1009. <https://doi.org/10.1521/jscp.2007.26.9.983>
- Mirghafourvand, M., Farshbaf-Khalili, A., & Ghanbari-Homayi, S. (2018). Marital adjustment and its relationship with religious orientations among Iranian infertile and fertile women: A cross-sectional study. *Journal of Religion and Health*. <https://doi.org/10.1007/s10943-018-0566-6>
- Montgomery, M. J. (2005). Psychosocial intimacy and identity: From early adolescence to emerging adulthood. *Journal of Adolescent Research*, 20(3), 346–374. <https://doi.org/10.1177/0743558404273118>

- Moreau, C., Trussell, J., & Bajos, N. (2013). Religiosity, religious affiliation, and patterns of sexual activity and contraceptive use in France. *The European Journal of Contraception & Reproductive Health Care*, 18(3), 168–180. <https://doi.org/10.3109/13625187.2013.777829>
- Morrill, A. C., Ickovics, J. R., Golubchikov, V. V., Beren, S. E., & Rodin, J. (1996). Safer sex: Social and psychological predictors of behavioral maintenance and change among heterosexual women. *Journal of Consulting and Clinical Psychology*, 64(4), 819–828. <https://doi.org/10.1037/0022-006X.64.4.819>
- Mosher, D. L., & Cross, H. J. (1971). Sex guilt and premarital sexual experiences of college students. *Journal of Consulting and Clinical Psychology*, 36(1), 27.
- Murphy, J. S., Nalbone, D. P., Wetchler, J. L., & Edwards, A. B. (2015). Caring for aging parents: The influence of family coping, spirituality/religiosity, and hope on the marital satisfaction of family caregivers. *The American Journal of Family Therapy*, 43(3), 238–250. <https://doi.org/10.1080/01926187.2015.1034636>
- Murray, K. A. (2002). Religion and divorce: Implications and strategies for counseling , religion and divorce: implications and strategies for counseling. *The Family Journal*, 10(2), 190–194. <https://doi.org/10.1177/1066480702102008>
- Murray-Swank, N. A., Pargament, K. I., & Mahoney, A. (2005). At the crossroads of sexuality and spirituality: The sanctification of sex by college students. *The International Journal for the Psychology of Religion*, 15(3), 199–219.
- Neto, F., & Pinto, M. (2013). The satisfaction with sex life across the adult life span. *Social Indicators Research*, 114(3), 767–784. <https://doi.org/10.1007/s11205-012-0181-y>
- Nicholas, L. J. (2004). The association between religiosity, sexual fantasy, participation in sexual acts, sexual enjoyment, exposure, and reaction to sexual materials among black South Africans. *Journal of Sex & Marital Therapy*, 30(1), 37–42. <https://doi.org/10.1080/00926230490247264>
- Norris, P., & Inglehart, R. (2004). *Sacred and secular: Religion and politics worldwide*. New York, NY: Cambridge University Press.
- Okami, P., & Shackelford, T. K. (2001). Human sex differences in sexual psychology and behavior. *Annual Review of Sex Research*, 12(1), 186–241. <https://doi.org/10.1080/10532528.2001.10559798>
- Olatunji, B. O. (2008). Disgust, scrupulosity and conservative attitudes about sex: Evidence for a mediational model of homophobia. *Journal of Research in Personality*, 42(5), 1364–1369. <https://doi.org/10.1016/j.jrp.2008.04.001>
- Olatunji, B. O., Haidt, J., McKay, D., & David, B. (2008). Core, animal reminder, and contamination disgust: Three kinds of disgust with distinct personality, behavioral, physiological, and clinical correlates. *Journal of Research in Personality*, 42(5), 1243–1259. <https://doi.org/10.1016/j.jrp.2008.03.009>
- Olatunji, B. O., Williams, N. L., Tolin, D. F., Abramowitz, J. S., Sawchuk, C. N., Lohr, J. M., & Elwood, L. S. (2007). The Disgust Scale: Item analysis, factor structure, and

- suggestions for refinement. *Psychological Assessment*, 19(3), 281–297. <https://doi.org/10.1037/1040-3590.19.3.281>
- Oliver, C. J., Watson, D. G., Gannon, T. A., & Beech, A. R. (2008). The effect of sexual priming cues on emotional recognition in nonviolent child sexual abusers: A preliminary study. *International Journal of Offender Therapy and Comparative Criminology*, 53(3), 292–304. <https://doi.org/10.1177/0306624X08317214>
- Olson, J. R., Marshall, J. P., Goddard, H. W., & Schramm, D. G. (2015). Shared religious beliefs, prayer, and forgiveness as predictors of marital satisfaction. *Family Relations*, 64(4), 519–533. <https://doi.org/10.1111/fare.12129>
- Olson, J. R., Marshall, J. P., Goddard, H. W., & Schramm, D. G. (2016). Variations in predictors of marital satisfaction across more religious and less religious regions of the United States. *Journal of Family Issues*, 37(12), 1658–1677. <https://doi.org/10.1177/0192513X14560643>
- O’Sullivan, L. F., & Thompson, A. E. (2014). Sexuality in adolescence. In D. L. Tolman & L. M. Diamond (Eds.), *APA Handbook of Sexuality and Psychology* (American psychological Association, Vol. 1, pp. 433–486). Washington, DC.
- Owen, J., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2011). The Revised Commitment Inventory: Psychometrics and use with unmarried couples. *Journal of Family Issues*, 32(6), 820–841. <https://doi.org/10.1177/0192513X10385788>
- Patrick, M. E., Maggs, J. L., & Abar, C. C. (2007). Reasons to have sex, personal goals, and sexual behavior during the transition to college. *Journal of Sex Research*, 44(3), 240–249.
- Patton, M. S. (1985). Masturbation from Judaism to Victorianism. *Journal of Religion and Health*, 24(2), 133–146.
- Pedersen, W. (2014). Forbidden fruit? A longitudinal study of Christianity, sex, and marriage. *The Journal of Sex Research*, 51(5), 542–550. <https://doi.org/10.1080/00224499.2012.753983>
- Perkins, H. W. (2002). Social norms and the prevention of alcohol misuse in collegiate contexts. *Journal of Studies on Alcohol, Supplement*, (s14), 164–172. <https://doi.org/10.15288/jsas.2002.s14.164>
- Perry, S. L. (2016a). From bad to worse? Pornography consumption, spousal religiosity, gender, and marital quality. *Sociological Forum*, 31(2), 441–464. <https://doi.org/10.1111/socf.12252>
- Perry, S. L. (2016b). Perceived spousal religiosity and marital quality across racial and ethnic groups. *Family Relations*, 65(2), 327–341. <https://doi.org/10.1111/fare.12192>
- Perry, S. L., & Whitehead, A. L. (2016). For better or for worse? Gender ideology, religious commitment, and relationship quality. *Journal for the Scientific Study of Religion*, 55(4), 737–755. <https://doi.org/10.1111/jssr.12308>
- Petersen, J. L., & Hyde, J. S. (2010). A meta-analytic review of research on gender differences in sexuality, 1993–2007. *Psychological Bulletin*, 136(1), 21.

- Petersen, J. L., & Hyde, J. S. (2011). Gender differences in sexual attitudes and behaviors: A review of meta-analytic results and large datasets. *Journal of Sex Research*, 48(2–3), 149–165. <https://doi.org/10.1080/00224499.2011.551851>
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In R. E. Petty & J. T. Cacioppo, *Communication and Persuasion* (pp. 1–24). New York, NY: Springer New York. [https://doi.org/10.1007/978-1-4612-4964-1\\_1](https://doi.org/10.1007/978-1-4612-4964-1_1)
- Pew Research Center. (2015). *The future of world religions: Population growth projections, 2010-2050*.
- Pew Research Center. (2016, January 27). Faith and the 2016 campaign. Retrieved April 24, 2018, from <http://www.pewforum.org/2016/01/27/faith-and-the-2016-campaign/>
- Pew Research Center. (2017, April 5). The changing global religious landscape. Retrieved May 19, 2018, from <http://www.pewforum.org/2017/04/05/the-changing-global-religious-landscape/>
- Philippot, P. (2013). *Émotion et psychothérapie: L'influence des émotions dans la société*. Primento.
- Phipps, W. E. (1980). The menstrual taboo in the Judeo-Christian tradition. *Journal of Religion and Health*, 19(4), 298–303. <https://doi.org/10.1007/BF00996252>
- Piedmont, R. L., & Wilkins, T. A. (2013). The role of personality in understanding religious and spiritual constructs. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the Psychology of Religion and Spirituality, Second Edition* (pp. 292–331). Guilford Press.
- Plaud, J. J., Gaither, G. A., Hegstad, H. J., Rowan, L., & Devitt, M. K. (1999). Volunteer bias in human psychophysiological sexual arousal research: To Whom do our research results apply? *Journal of Sex Research*, 36(2), 171–179. <https://doi.org/10.1080/00224499909551982>
- Pluhar, E., Frongillo, E. A., Stycos, J. M., & Dempster-McClain, D. (1998). Understanding the relationship between religion and the sexual attitudes and behaviors of college students. *Journal of Sex Education and Therapy*, 23(4), 288–296. <https://doi.org/10.1080/01614576.1998.11074264>
- Plutchik, R. (1980). *Emotion: A psychoevolutionary synthesis* (Harper & Row). New York.
- Pollard, S. E., Riggs, S. A., & Hook, J. N. (2014). Mutual influences in adult romantic attachment, religious coping, and marital adjustment. *Journal of Family Psychology*, 28(5), 615–624. <https://doi.org/10.1037/a0036682>
- Prade, C., & Saroglou, V. (2016). Awe's effects on generosity and helping. *The Journal of Positive Psychology*, 11(5), 522–530. <https://doi.org/10.1080/17439760.2015.1127992>
- Preston, J. L., & Ritter, R. S. (2012). Cleanliness and godliness: Mutual association between two kinds of personal purity. *Journal of Experimental Social Psychology*, 48(6), 1365–1368. <https://doi.org/10.1016/j.jesp.2012.05.015>
- Purifoy, F. E., Grodsky, A., & Giambra, L. M. (1992). The relationship of sexual daydreaming to sexual activity, sexual drive, and sexual attitudes for women across the

- life-span. *Archives of Sexual Behavior*, 21(4), 369–385.  
<https://doi.org/10.1007/BF01542026>
- Ramsay, J. E., Pang, J. S., Shen, M. J., & Rowatt, W. C. (2014). Rethinking value violation: Priming religion increases prejudice in Singaporean Christians and Buddhists. *The International Journal for the Psychology of Religion*, 24(1), 1–15.  
<https://doi.org/10.1080/10508619.2012.761525>
- Randolph-Seng, B., & Nielsen, M. E. (2007). Honesty: One effect of primed religious representations. *International Journal for the Psychology of Religion*, 17(4), 303–315.  
<https://doi.org/10.1080/10508610701572812>
- Rauer, A., & Volling, B. (2015). The role of relational spirituality in happily-married couples' observed problem-solving. *Psychology of Religion and Spirituality*, 7(3), 239–249. <https://doi.org/10.1037/rel0000022>
- Regnerus, M. D. (2005). Talking about sex: Religion and patterns of parent–child communication about sex and contraception. *The Sociological Quarterly*, 46(1), 79–105. <https://doi.org/10.1111/j.1533-8525.2005.00005.x>
- Regnerus, M. D. (2009). *Forbidden fruit: Sex & religion in the lives of American teenagers*. Oxford; New York: Oxford University Press.
- Regnerus, M. D., & Uecker, J. (2011). *Premarital sex in America: How young Americans meet, mate, and think about marrying* (1 edition). Oxford; New York: Oxford University Press.
- Regnerus, M. D., & Uecker, J. E. (2007). Religious influences on sensitive self-reported behaviors: The product of social desirability, deceit, or embarrassment? *Sociology of Religion*, 68(2), 145–163.
- Reiss, I. L. (1967). *The social context of premarital sexual permissiveness*. Holt, Rinehart and Winston.
- Renaud, C. A., & Byers, E. S. (2001). Positive and negative sexual cognitions: Subjective experience and relationships to sexual adjustment. *Journal of Sex Research*, 38(3), 252–262. <https://doi.org/10.1080/00224490109552094>
- Riekk, T., Lindeman, M., & Lipsanen, J. (2013). Conceptions about the mind-body problem and their relations to afterlife beliefs, paranormal beliefs, religiosity, and ontological confusions. *Advances in Cognitive Psychology*, 9(3), 112–120.  
<https://doi.org/10.2478/v10053-008-0138-5>
- Riggs, N. R., Tate, E. B., Ridenour, T. A., Reynolds, M. D., Zhai, Z. W., Vanyukov, M. M., & Tarter, R. E. (2013). Longitudinal associations from neurobehavioral disinhibition to adolescent risky sexual behavior in boys: Direct and mediated effects through moderate alcohol consumption. *Journal of Adolescent Health*, 53(4), 465–470.  
<https://doi.org/10.1016/j.jadohealth.2013.05.017>
- Rigo, C., & Saroglou, V. (2013, August). *Religious priming decreases appreciation and watching time of erotic pictures*. Paper presented at the International Association for Psychology of Religion Conference, Lausanne, Switzerland.

- Rigo, C., & Saroglou, V. (2018). Religiosity and sexual behavior in Christians and Muslims: Tension and underlying affects and cognitions. *Manuscript Submitted for Publication*.
- Rigo, C., Uzarevic, F., & Saroglou, V. (2016). Make love and lose your religion and virtue: Recalling sexual experiences undermines spiritual intentions and moral behavior. *Journal for the Scientific Study of Religion*, 55(1), 23–39. <https://doi.org/10.1111/jssr.12244>
- Riley, A., & May, K. (2001). Sexual desire disorders. (pp. 1849-1872). In *Treatments of Psychiatric Disorders* (pp. 1849–1872). American Psychiatric Press.
- Ritter, R. S., Preston, J. L., Salomon, E., & Relihan-Johnson, D. (2016). Imagine no religion: Heretical disgust, anger and the symbolic purity of mind. *Cognition & Emotion*, 30(4), 778–796. <https://doi.org/10.1080/02699931.2015.1030334>
- Robertson, C. K. (2006). *Religion & sexuality: Passionate debates*. Peter Lang.
- Robles, T. F., Slatcher, R. B., Trombello, J. M., & McGinn, M. M. (2014). Marital quality and health: a meta-analytic review. *Psychological Bulletin*, 140(1), 140–187. <https://doi.org/10.1037/a0031859>
- Roccas S. (2005). Religion and Value Systems. *Journal of Social Issues*, 61(4), 747–759. <https://doi.org/10.1111/j.1540-4560.2005.00430.x>
- Roccas, S., & Elster, A. (2013). Values and religiosity. In V. Saroglou (Ed.), *Religion, Personality, and Social Behavior* (pp. 193–212). Psychology Press.
- Roccas, S., Sagiv, L., Schwartz, S. H., & Knafo, A. (2002). The Big Five Personality Factors and personal values. *Personality and Social Psychology Bulletin*, 28(6), 789–801. <https://doi.org/10.1177/0146167202289008>
- Roche, J. P. (1986). Premarital sex: Attitudes and behavior by dating stage. *Adolescence*, 21(81).
- Roland, N. (2017). *La persévérance en première année à l'université: Quand la psychologie sociale s'invite dans les problématiques éducatives*. Louvain-la-Neuve: Université catholique de Louvain. Thèse de doctorat inédite. Prom.: M. Frenay & G. Boudrenghien.
- Rollins, B. C., & Feldman, H. (1970). Marital Satisfaction over the Family Life Cycle. *Journal of Marriage and Family*, 32(1), 20–28. <https://doi.org/10.2307/349967>
- Rostosky, S. S., Regnerus, M. D., & Wright, M. L. C. (2003). Coital debut: The role of religiosity and sex attitudes in the add health survey. *The Journal of Sex Research*, 40(4), 358–367. <https://doi.org/10.1080/00224490209552202>
- Rostosky, S. S., Wilcox, B. L., Wright, M. L. C., & Randall, B. A. (2004). The impact of religiosity on adolescent sexual behavior: A review of the evidence. *Journal of Adolescent Research*, 19(6), 677–697. <https://doi.org/10.1177/0743558403260019>
- Rounding, K., Lee, A., Jacobson, J. A., & Ji, L.-J. (2012). Religion replenishes self-control. *Psychological Science*, 23(6), 635–642. <https://doi.org/10.1177/0956797611431987>

- 
- Rowatt, W. C., & Schmitt, D. P. (2003). Associations between religious orientation and varieties of sexual experience. *Journal for the Scientific Study of Religion*, 42(3), 455–465.
- Rozin, P., Haidt, J., & McCauley, C. R. (2016). Disgust. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of emotions*, 4th ed (pp. 815–834). New York, NY, US: Guilford Press.
- Rozin, P., Lowery, L., Imada, S., & Haidt, J. (1999). The CAD triad hypothesis: a mapping between three moral emotions (contempt, anger, disgust) and three moral codes (community, autonomy, divinity). *Journal of Personality and Social Psychology*, 76(4), 574.
- Runkel, G. (1998). Sexual morality of Christianity. *Journal of Sex & Marital Therapy*, 24(2), 103–122. <https://doi.org/10.1080/00926239808404924>
- Sabey, A. K., Rauer, A. J., & Jensen, J. F. (2014). Compassionate love as a mechanism linking sacred qualities of marriage to older couples' marital satisfaction. *Journal of Family Psychology*, 28(5), 594–603. <https://doi.org/10.1037/a0036991>
- Santtila, P., Wager, I., Witting, K., Harlaar, N., Jern, P., Johansson, A., ... Sandnabba, N. K. (2007). Discrepancies between Sexual Desire and Sexual Activity: Gender Differences and Associations with Relationship Satisfaction. *Journal of Sex & Marital Therapy*, 34(1), 31–44. <https://doi.org/10.1080/00926230701620548>
- Saroglou, V. (2002). Religion and the five factors of personality: a meta-analytic review. *Personality and Individual Differences*, 2(1), 15–25.
- Saroglou, V. (2010). Religiousness as a cultural adaptation of basic traits: A five-factor model perspective. *Personality and Social Psychology Review*, 14(1), 108–125. <https://doi.org/10.1177/1088868309352322>
- Saroglou, V. (2011). Believing, Bonding, Behaving, and Belonging: The Big Four religious dimensions and cultural variation. *Journal of Cross-Cultural Psychology*, 42(8), 1320–1340. <https://doi.org/10.1177/0022022111412267>
- Saroglou, V. (2014). Introduction: Studying religion in personality and social psychology. In V. Saroglou (Ed.), *Religion, personality, and social behavior* (pp. 1–28). New York (N.Y.): Psychology press.
- Saroglou, V. (2018). Religion and related morality across cultures. In D. Matsumoto & H. C. Hwang (Eds.), *The Oxford handbook of culture and psychology* (2nd ed.) (Oxford University Press). New York, NY.
- Saroglou, V., Buxant, C., & Tilquin, J. (2008). Positive emotions as leading to religion and spirituality. *The Journal of Positive Psychology*, 3(3), 165–173. <https://doi.org/10.1080/17439760801998737>
- Saroglou, V., Delpierre, V., & Dernelle, R. (2004). Values and religiosity: a meta-analysis of studies using Schwartz's model. *Personality and Individual Differences*, 37(4), 721–734. <https://doi.org/10.1016/j.paid.2003.10.005>

- Saroglou, V., & Mathijssen, F. (2007). Religion, multiple identities, and acculturation: A study of Muslim immigrants in Belgium. *Archive for the Psychology of Religion*, 29, 177.
- Saroglou, V., & Muñoz-García, A. (2008). Individual differences in religion and spirituality: An issue of personality traits and/or values. *Journal for the Scientific Study of Religion*, 47(1), 83–101.
- Saroglou, V., Delpierre, V., & Dernelle, R. (2004). Values and religiosity: a meta-analysis of studies using Schwartz's model. *Personality and Individual Differences*, 37(4), 721–734. <https://doi.org/10.1016/j.paid.2003.10.005>
- Saucier, G., Kenner, J., Iurino, K., Malham, P. B., Chen, Z., Thalmayer, A. G., ... Altschul, C. (2015). Cross-cultural differences in a global “survey of World views.” *Journal of Cross-Cultural Psychology*, 46(1), 53–70. <https://doi.org/10.1177/0022022114551791>
- Saucier, G., & Skrzypińska, K. (2006). Spiritual but not religious? Evidence for two independent dispositions. *Journal of Personality*, 74(5), 1257–1292. <https://doi.org/10.1111/j.1467-6494.2006.00409.x>
- Schmitt, D. P. (2003). Universal sex differences in the desire for sexual variety: Tests from 52 nations, 6 continents, and 13 islands. *Journal of Personality and Social Psychology*, 85(1), 85–104. <https://doi.org/10.1037/0022-3514.85.1.85>
- Schmitt, D. P. (2005). Sociosexuality from Argentina to Zimbabwe: A 48-nation study of sex, culture, and strategies of human mating. *Behavioral and Brain Sciences*, 28(02). <https://doi.org/10.1017/S0140525X05000051>
- Schmitt, D. P., & Fuller, R. C. (2015). On the varieties of sexual experience: Cross-cultural links between religiosity and human mating strategies. *Psychology of Religion and Spirituality*, 7(4), 314–326. <https://doi.org/10.1037/rel0000036>
- Schoenfeld, E. A., Loving, T. J., Pope, M. T., Huston, T. L., & Štulhofer, A. (2017). Does sex really matter? Examining the connections between spouses' nonsexual behaviors, sexual frequency, sexual satisfaction, and marital satisfaction. *Archives of Sexual Behavior*, 46(2), 489–501. <https://doi.org/10.1007/s10508-015-0672-4>
- Schramm, D. G., Marshall, J. P., Harris, V. W., & Lee, T. R. (2012). Religiosity, homogamy, and marital adjustment: An examination of newlyweds in first marriages and remarriages. *Journal of Family Issues*, 33(2), 246–268. <https://doi.org/10.1177/0192513X11420370>
- Schwartz, P., Diefendorf, S., & McGlynn-Wright, A. (2014). Sexuality in aging. In D. L. Tolman & L. M. Diamond (Eds.), *APA Handbook of sexuality and psychology*. (Vol. Vol. 1: Person-based approaches, pp. 523–551). Washington, DC: American Psychological Association.
- Schwartz, S. H. (1994). Are there universal aspects in the structure and contents of human values? *Journal of Social Issues*, 50(4), 19–45. <https://doi.org/10.1111/j.1540-4560.1994.tb01196.x>

- Schwartz, S. H. (2012). Values and religion in adolescent development: Cross-national and comparative evidence. In G. Trommsdorff & X. Chen (Eds.), *Values, religion, and culture in adolescent development* (pp. 97–122). Cambridge University Press.
- Sedikides, C., & Gregg, A. P. (2008). Self-enhancement: Food for thought. *Perspectives on Psychological Science*, 3(2), 102–116. <https://doi.org/10.1111/j.1745-6916.2008.00068.x>
- Severy, L. J., Brigham, J. C., & Schlenker, B. R. (1976). *A contemporary introduction to social psychology*. New York, NY, US: McGraw-Hill.
- Shahhosseini, Z., Gardeshi, Z. H., Pourasghar, M., & Salehi, F. (2014). A review of affecting factors on sexual satisfaction in women. *Materia Socio-Medica*, 26(6), 378–381. <https://doi.org/10.5455/msm.2014.26.378-381>
- Shariff, A. F., & Norenzayan, A. (2007). God is watching you: Priming god concepts increases prosocial behavior in an anonymous economic game. *Psychological Science*, 18(9), 803–809. <https://doi.org/10.1111/j.1467-9280.2007.01983.x>
- Shariff, A. F., Willard, A. K., Andersen, T., & Norenzayan, A. (2015). Religious priming: A meta-analysis with a focus on prosociality. *Personality and Social Psychology Review*, 20(1), 27–48. <https://doi.org/10.1177/1088868314568811>
- Sharma, L., Markon, K. E., & Clark, L. A. (2014). Toward a theory of distinct types of “impulsive” behaviors: A meta-analysis of self-report and behavioral measures. *Psychological Bulletin*, 140(2), 374–408. <http://dx.doi.org/10.1037/a0034418>
- Sheldon, K. M. (2006). Catholic guilt? Comparing Catholics’ and Protestants’ religious motivations. *International Journal for the Psychology of Religion*, 16(3), 209–223. [https://doi.org/10.1207/s15327582ijpr1603\\_5](https://doi.org/10.1207/s15327582ijpr1603_5)
- Sierra, J. C., Ortega, V., & Gutiérrez-Quintanilla, J. R. (2008). Encuesta de opinión sexual: Fiabilidad, validez y datos normativos de una versión reducida en muestras salvadoreñas, 25, 13.
- Simons, R. L., Simons, L. G., & Wallace, L. E. (2004). *Families, delinquency, and crime: Linking society’s most basic institution to antisocial behavior*. Roxbury Publishing Company.
- Simpson, J. A., & Gangestad, S. W. (1991). Individual differences in sociosexuality: evidence for convergent and discriminant validity. *Journal of Personality and Social Psychology*, 60(6), 870.
- Simpson, W. S., & Ramberg, J. A. (1992). The influence of religion on sexuality: implications for sex therapy. *Bulletin of the Menninger Clinic*, 56(4), 511–523.
- Singh, B. K., Walton, B. L., & Williams, J. S. (1976). Extramarital sexual permissiveness: Conditions and contingencies. *Journal of Marriage and the Family*, 38(4), 701–712.
- Smith, A., Rosenthal, D. A., & Reichler, H. (1996). High schoolers’ masturbatory practices: their relationship to sexual intercourse and personal characteristics. *Psychological Reports*, 79(2), 499–509.

- Smith, C. A., & Lazarus, R. S. (1990). Emotion and adaptation. In *Handbook of personality: Theory and research* (Vol. 609–637).
- Smith, J. A., & Smith, A. H. (2000). Parishioner attitudes toward the divorced/separated: Awareness seminars as counseling interventions. *Counseling and Values*, 45(1), 17–27. <https://doi.org/10.1002/j.2161-007X.2000.tb00179.x>
- Smith, T. W. (1994). Attitudes toward sexual permissiveness: Trends, correlates, and behavioral connections. In A. S. Rossi (Ed.), *Sexuality Across the Life Course* (pp. 63–97). University of Chicago Press.
- Smock, P. J., & Greenland, F. R. (2010). Diversity in pathways to parenthood: Patterns, implications, and emerging research directions. *Journal of Marriage and Family*, 72(3), 576–593.
- Spanier, G. B., & Lewis, R. A. (1980). Marital quality: A review of the seventies. *Journal of Marriage and Family*, 42(4), 825–839. <https://doi.org/10.2307/351827>
- Sprecher, S. (2002). Sexual satisfaction in premarital relationships: Associations with satisfaction, love, commitment, and stability. *The Journal of Sex Research*, 39(3), 190–196. <https://doi.org/10.1080/00224490209552141>
- Stack, S., & Eshleman, J. R. (1998). Marital status and happiness: A 17-nation study. *Journal of Marriage and Family*, 60(2), 527–536. <https://doi.org/10.2307/353867>
- Stafford, L. (2016). Marital sanctity, relationship maintenance, and marital quality. *Journal of Family Issues*, 37(1), 119–131. <https://doi.org/10.1177/0192513X13515884>
- Stafford, Laura, David, P., & McPherson, S. (2014). Sanctity of marriage and marital quality. *Journal of Social and Personal Relationships*, 31(1), 54–70. <https://doi.org/10.1177/0265407513486975>
- Sternberg, R. J. (1997). Construct validation of a triangular love scale. *European Journal of Social Psychology*, 27(3), 313–335.
- Stevenson, R. J., Case, T. I., & Oaten, M. J. (2011). Effect of self-reported sexual arousal on responses to sex-related and non-sex-related disgust cues. *Archives of Sexual Behavior*, 40(1), 79–85. <https://doi.org/10.1007/s10508-009-9529-z>
- Štulhofer, A., Buško, V., & Brouillard, P. (2010). Development and bicultural validation of the New Sexual Satisfaction Scale. *Journal of Sex Research*, 47(4), 257–268. <https://doi.org/10.1080/00224490903100561>
- Stulhofer, A., Soh, D., Jelaska, N., Bacak, V., & Landripet, I. (2011). Religiosity and sexual risk behavior among Croatian college students, 1998–2008. *Journal of Sex Research*, 48(4), 360–371. <https://doi.org/10.1080/00224499.2010.494257>
- Sullivan, K. T. (2001). Understanding the relationship between religiosity and marriage: An investigation of the immediate and longitudinal effects of religiosity on newlywed couples. *Journal of Family Psychology*, 15(4), 610–626. <https://doi.org/10.1037/0893-3200.15.4.610>

- Sümer, Z. H. (2015). Gender, religiosity, sexual activity, sexual knowledge, and attitudes toward controversial aspects of sexuality. *Journal of Religion and Health*, 54(6), 2033–2044. <https://doi.org/10.1007/s10943-014-9831-5>
- Summers, S. (2014). Friends and friendship. In A. Thatcher (Ed.), *The Oxford Handbook of Theology, Sexuality, and Gender* (pp. 688–704). Oxford University Press.
- Sumter, S. R., Valkenburg, P. M., & Peter, J. (2013). Perceptions of love across the lifespan: Differences in passion, intimacy, and commitment. *International Journal of Behavioral Development*, 37(5), 417–427. <https://doi.org/10.1177/0165025413492486>
- Symons, D. (1979). *The evolution of human sexuality* (Oxford University Press). New York.
- Szinovacz, M. E. (1983). Using couple data as a methodological tool: The case of marital violence. *Journal of Marriage and Family*, 45(3), 633–644. <https://doi.org/10.2307/351668>
- Szinovacz, M. E., & Egley, L. C. (1995). Comparing one-partner and couple data on sensitive marital behaviors: The case of marital violence. *Journal of Marriage and Family*, 57(4), 995–1010. <https://doi.org/10.2307/353418>
- Tang, N., Bensman, L., & Hatfield, E. (2013). Culture and sexual self-disclosure in intimate relationships. *Interpersona: An International Journal on Personal Relationships*, 7(2), 227–245. <https://doi.org/10.5964/ijpr.v7i2.141>
- Terrizzi, J. A., Shook, N. J., & Ventis, W. L. (2010). Disgust: A predictor of social conservatism and prejudicial attitudes toward homosexuals. *Personality and Individual Differences*, 49(6), 587–592. <https://doi.org/10.1016/j.paid.2010.05.024>
- Thatcher, A. (2014). *The Oxford Handbook of Theology, Sexuality, and Gender*. Oxford University Press.
- Thornton, A., & Camburn, D. (1987). The influence of the family on premarital sexual attitudes and behavior. *Demography*, 24(3), 323–340. <https://doi.org/10.2307/2061301>
- Thornton, A., & Camburn, D. (1989). Religious participation and adolescent sexual behavior and attitudes. *Journal of Marriage and the Family*, 51(3), 641. <https://doi.org/10.2307/352164>
- Timmerman, J. H. (2001). When religion is its own worst enemy: How therapists can help people shed hurtful notions that masquerade as good theology. *Journal of Sex Education & Therapy*, 26(4), 259.
- Timmers, A. D., Bossio, J. A., & Chivers, M. L. (2018). Disgust, sexual cues, and the prophylaxis hypothesis. *Evolutionary Psychological Science*, 4(2), 179–190. <https://doi.org/10.1007/s40806-017-0127-3>
- Toburen, T., & Meier, B. P. (2010). Priming god-related concepts increases anxiety and task persistence. *Journal of Social and Clinical Psychology*, 29(2), 127–143. <https://doi.org/10.1521/jscp.2010.29.2.127>
- Tolman, D. L., & Diamond, L. M. (2014). *APA Handbook of Sexuality and Psychology* (American psychological Association). Washington, DC.

- Townsend, J. M., & Wasserman, T. H. (2011). Sexual hookups among college students: Sex differences in emotional reactions. *Archives of Sexual Behavior*, 40(6), 1173–1181. <https://doi.org/10.1007/s10508-011-9841-2>
- Treas, J. (2002). How cohorts, education, and ideology shaped a new sexual revolution on American attitudes toward nonmarital sex, 1972-1998. *Sociological Perspectives*, 45(3), 267–283. <https://doi.org/10.1525/sop.2002.45.3.267>
- Treas, J., & Giesen, D. (2000). Sexual infidelity among married and cohabiting Americans. *Journal of Marriage and Family*, 62(1), 48–60.
- Trivers, R. (1972). *Parental investment and sexual selection* (Vol. 136, p. 179). (Cambridge, MA: Biological Laboratories, Vol. 136). Harvard University.
- Trzebiatowska, M., & Bruce, S. (2012). *Why are women more religious than men?* OUP Oxford.
- Twenge, J. M. (1997). Changes in masculine and feminine traits over time: A meta-analysis. *Sex Roles*, 36(5).
- Twenge, J. M., Sherman, R. A., & Wells, B. E. (2015). Changes in American adults' sexual behavior and attitudes, 1972–2012. *Archives of Sexual Behavior*, 44(8), 2273–2285. <https://doi.org/10.1007/s10508-015-0540-2>
- Tybur, J. M. (2009). *Disgust dissected: An investigation of the validity of the Three Domain Disgust Scale*. The University of New Mexico. Retrieved from <http://gradworks.umi.com/33/69/3369617.html>
- Tybur, J. M., Lieberman, D., & Griskevicius, V. (2009). Microbes, mating, and morality: Individual differences in three functional domains of disgust. *Journal of Personality and Social Psychology*, 97(1), 103–122. <https://doi.org/10.1037/a0015474>
- Uzarevic, F., Saroglou, V., & Clobert, M. (2017). Are atheists undogmatic? *Personality and Individual Differences*, 116, 164–170.
- Vaaler, M. L., Ellison, C. G., & Powers, D. A. (2009). Religious influences on the risk of marital dissolution. *Journal of Marriage and Family*, 71(4), 917–934.
- Van Cappellen, P., & Saroglou, V. (2012). Awe activates religious and spiritual feelings and behavioral intentions. *Psychology of Religion and Spirituality*, 4(3), 223–236. <https://doi.org/10.1037/a0025986>
- Van Cappellen, P., Saroglou, V., Iweins, C., Piovesana, M., & Fredrickson, B. L. (2013). Self-transcendent positive emotions increase spirituality through basic world assumptions. *Cognition & Emotion*, 27(8), 1378–1394. <https://doi.org/10.1080/02699931.2013.787395>
- Van Cappellen, P., Saroglou, V., & Toth-Gauthier, M. (2016). Religiosity and prosocial behavior among churchgoers: Exploring underlying mechanisms. *International Journal for the Psychology of Religion*, 26(1), 19–30. <https://doi.org/10.1080/10508619.2014.958004>

- Van Cappellen, P., Toth-Gauthier, M., Saroglou, V., & Fredrickson, B. L. (2016). Religion and well-being: The mediating role of positive emotions. *Journal of Happiness Studies*, 17(2), 485–505. <https://doi.org/10.1007/s10902-014-9605-5>
- Vasilenko, S. A., & Lefkowitz, E. S. (2014). Changes in religiosity after first intercourse in the transition to adulthood. *Psychology of Religion and Spirituality*, 6(4), 310–315. <https://doi.org/10.1037/a0037472>
- Vazire, S., & Carlson, E. N. (2011). Others sometimes know us better than we know ourselves. *Current Directions in Psychological Science*, 20(2), 104–108. <https://doi.org/10.1177/0963721411402478>
- Vignoles, V. L., Owe, E., Becker, M., Smith, P. B., Easterbrook, M. J., Brown, R., ... Bond, M. H. (2016). Beyond the ‘east–west’ dichotomy: Global variation in cultural models of selfhood. *Journal of Experimental Psychology: General*, 145(8), 966–1000. <https://doi.org/10.1037/xge0000175>
- Vonderheide, S. G., & Mosher, D. L. (1988). Should I put in my diaphragm? Sex-guilt and turn-offs. *Journal of Psychology & Human Sexuality*, 1(1), 97–111. [https://doi.org/10.1300/J056v01n01\\_08](https://doi.org/10.1300/J056v01n01_08)
- Wade, J. (2013). Transpersonal sexual experiences. In H. L. Friedman & G. Hartelius (Eds.), *The Wiley-Blackwell handbook of transpersonal psychology* (pp. 382–400). Oxford, UK: Wiley-Blackwell.
- Walcott, C. M., Chenneville, T., & Tarquini, S. (2011). Relationship between recall of sex education and college students’ sexual attitudes and behavior. *Psychology in the Schools*, 48(8), 828–842. <https://doi.org/10.1002/pits.20592>
- Ward, P. J., Lundberg, N. R., Zabriskie, R. B., & Berrett, K. (2009). Measuring marital satisfaction: A comparison of the Revised Dyadic Adjustment Scale and the Satisfaction with Married Life Scale. *Marriage & Family Review*, 45(4), 412–429. <https://doi.org/10.1080/0149420902828219>
- Weeden, J., Cohen, A. B., & Kenrick, D. T. (2008). Religious attendance as reproductive support. *Evolution and Human Behavior*, 29(5), 327–334. <https://doi.org/10.1016/j.evolhumbehav.2008.03.004>
- Weeden, J., & Kurzban, R. (2013). What predicts religiosity? A multinational analysis of reproductive and cooperative morals. *Evolution and Human Behavior*, 34(6), 440–445. <https://doi.org/10.1016/j.evolhumbehav.2013.08.006>
- Welch, M. R., Tittle, C. R., & Grasmick, H. G. (2006). Christian religiosity, self-control and social conformity. *Social Forces*, 84(3), 1605–1623. <https://doi.org/10.1353/sof.2006.0075>
- Wells, B. E., & Twenge, J. M. (2005). Changes in young people’s sexual behavior and attitudes, 1943–1999: A cross-temporal meta-analysis. *Review of General Psychology*, 9(3), 249–261. <https://doi.org/10.1037/1089-2680.9.3.249>
- Westera, D. A., & Bennett, L. R. (1994). Population-focused research: A broad-based survey of teens’ attitudes, beliefs, and behaviors. *International Journal of Nursing Studies*, 31(6), 521–531. [https://doi.org/10.1016/0020-7489\(94\)90062-0](https://doi.org/10.1016/0020-7489(94)90062-0)

- Whitehead, A. L. (2010). Sacred rites and civil rights: religion's effect on attitudes toward same-sex unions and the perceived cause of homosexuality. *Social Science Quarterly*, 91(1), 63–79.
- Whitley, B. E. (2009). Religiosity and attitudes toward lesbians and gay men: A meta-analysis. *International Journal for the Psychology of Religion*, 19(1), 21–38. <https://doi.org/10.1080/10508610802471104>
- Wiederman, M. W., & Allgeier, E. R. (1996). Expectations and attributions regarding extramarital sex among young married individuals. *Journal of Psychology & Human Sexuality*, 8(3), 21–35. [https://doi.org/10.1300/J056v08n03\\_02](https://doi.org/10.1300/J056v08n03_02)
- Wiederman, M. W., & Hurd, C. (1999). Extradyadic involvement during dating. *Journal of Social and Personal Relationships*, 16(2), 265–274. <https://doi.org/10.1177/0265407599162008>
- Wiederman, Michael W. (1997). Extramarital Sex: Prevalence and Correlates in a National Survey. *The Journal of Sex Research*, 34(2), 167–174.
- Wiederman, Michael W. (2004). Self-control and sexual behavior. In *Handbook of self-regulation: Research, theory, and applications* (pp. 525–536).
- Wiegel, M., Scepkowski, L. A., & Barlow, D. H. (2007). Affective processes in sexual arousal and sexual dysfunction. In E. Janssen (Ed.), *The psychophysiology of sex* (pp. 143–165). Bloomington, IN: Indiana University Press.
- Wilcox, W. B., & Dew, J. (2016). The social and cultural predictors of generosity in marriage: Gender egalitarianism, religiosity, and familism. *Journal of Family Issues*, 37(1), 97–118. <https://doi.org/10.1177/0192513X13513581>
- Willard, A. K., & Norenzayan, A. (2013). Cognitive biases explain religious belief, paranormal belief, and belief in life's purpose. *Cognition*, 129(2), 379–391. <https://doi.org/10.1016/j.cognition.2013.07.016>
- Wilmoth, J. D., Blaney, A. D., & Smith, J. R. (2015). Marital satisfaction, negative interaction, and religiosity: A comparison of three age groups. *Journal of Religion, Spirituality & Aging*, 27(2–3), 222–240. <https://doi.org/10.1080/15528030.2014.997955>
- Wilson, K. L., Charker, J., Lizzio, A., Halford, K., & Kimlin, S. (2005). Assessing how much couples work at their relationship: The behavioral self-regulation for effective relationships scale. *Journal of Family Psychology*, 19(3), 385–393. <http://dx.doi.org/10.1037/0893-3200.19.3.385>
- Wilson, S. M., & Medora, N. P. (1990). Gender comparisons of college students' attitudes toward sexual behavior. *Adolescence*, 25(99).
- Wiltermuth, S. S. (2011). Cheating more when the spoils are split. *Organizational Behavior and Human Decision Processes*, 115(2), 157–168. <https://doi.org/10.1016/j.obhdp.2010.10.001>
- Wojcik, S. P., & Ditto, P. H. (2014). Motivated happiness: Self-enhancement inflates self-reported subjective well-being. *Social Psychological and Personality Science*, 5(7), 825–834. <https://doi.org/10.1177/1948550614534699>

- Wolfinger, N. H., & Wilcox, W. B. (2008). Happily ever after? Religion, marital status, gender and relationship quality in urban families. *Social Forces*, 86(3), 1311–1337.
- Woo, J. S. T., Brotto, L. A., & Gorzalka, B. B. (2011). The role of sex guilt in the relationship between culture and women's sexual desire. *Archives of Sexual Behavior*, 40(2), 385–394. <https://doi.org/10.1007/s10508-010-9609-0>
- Woo, J. S. T., Morshedian, N., Brotto, L. A., & Gorzalka, B. B. (2012). Sex guilt mediates the relationship between religiosity and sexual desire in East Asian and Euro-Canadian college-aged women. *Archives of Sexual Behavior*, 41(6), 1485–1495. <https://doi.org/10.1007/s10508-012-9918-6>
- Wu, Y., Yang, Y., & Chiu, C.-Y. (2014). Responses to religious norm defection: The case of Hui Chinese Muslims not following the halal diet. *International Journal of Intercultural Relations*, 39, 1–8. <https://doi.org/10.1016/j.ijintrel.2013.08.008>
- Wyatt, G. E., & Dunn, K. M. (1991). Examining predictors of sex guilt in multiethnic samples of women. *Archives of Sexual Behavior*, 20(5), 471–485. <https://doi.org/10.1007/BF01542409>
- Yeh, H.-C., Lorenz, F. O., Wickrama, K. A. S., Conger, R. D., & Elder, G. H. (2006). Relationships among sexual satisfaction, marital quality, and marital instability at midlife. *Journal of Family Psychology*, 20(2), 339–343. <https://doi.org/10.1037/0893-3200.20.2.339>
- Yilmaz, O., Karadöller, D. Z., & Sofuoğlu, G. (2016). Analytic thinking, religion, and prejudice: An experimental test of the dual-process model of mind. *The International Journal for the Psychology of Religion*, 26(4), 360–369. <https://doi.org/10.1080/10508619.2016.1151117>
- Yip, A. K.-T. (2010). Special feature: Sexuality and religion/ spirituality. *Sexualities*, 13(6), 667–670. <https://doi.org/10.1177/1363460710384555>
- Zaleski, E. H., & Schiaffino, K. M. (2000). Religiosity and sexual risk-taking behavior during the transition to college. *Journal of Adolescence*, 23(2), 223–227. <https://doi.org/10.1006/jado.2000.0309>
- Zhaoyang, R., Martire, L. M., & Stanford, A. M. (2018). Disclosure and holding back: Communication, psychological adjustment, and marital satisfaction among couples coping with osteoarthritis. *Journal of Family Psychology*, 32(3), 412–418. <https://doi.org/10.1037/fam0000390>
- Zhong, C.-B., & Liljenquist, K. (2006). Washing away your sins: Threatened morality and physical cleansing. *Science*, 313(5792), 1451–1452. <https://doi.org/10.1126/science.1130726>
- Zimmer-Gembeck, M. J., & Helfand, M. (2008). Ten years of longitudinal research on U.S. adolescent sexual behavior: Developmental correlates of sexual intercourse, and the importance of age, gender and ethnic background. *Developmental Review*, 28(2), 153–224. <https://doi.org/10.1016/j.dr.2007.06.001>

- Zinnbauer, B. J., & Pargament, K. I. (2005). Religiousness and spirituality. In R. F. Paloutzian & C. L. Park (Eds.), *Handbook of the psychology of religion and spirituality* (Guildford Press, pp. 21–42). New York.
- Zuckerman, M., Bone, R. N., Neary, R., Mangelsdorff, D., & Brustman, B. (1972). What is the sensation seeker? Personality trait and experience correlates of the Sensation-Seeking Scales. *Journal of Consulting and Clinical Psychology*, 39(2), 308–321. <http://dx.doi.org/10.1037/h0033398>
- Zuckerman, M., Eysenck, S. B., & Eysenck, H. J. (1978). Sensation seeking in England and America: Cross-cultural, age, and sex comparisons. *Journal of Consulting and Clinical Psychology*, 46(1), 139–149. <http://dx.doi.org/10.1037/0022-006X.46.1.139>
- Zuckerman, M., Tushup, R., & Finner, S. (1976). Sexual attitudes and experience: Attitude and personality correlates and changes produced by a course in sexuality. *Journal of Consulting and Clinical Psychology*, 44(1), 7–19. <http://dx.doi.org/10.1037/0022-006X.44.1.7>

## **Appendix**

---



---

## **Appendix 1: Religious priming decreases appreciation and watching time of erotic pictures**

Reference:

Rigo C., & Saroglou, V. (2014, May). *Religious priming decreases appreciation and watching time of erotic pictures*. Poster presented at the congress of Belgian Association for Psychological Science, Leuven, Belgium.

### **Abstract**

The correlational links between religiousness and restricted sexuality (attitudes and reported behavior) have already been well-established. However, little is known about the causal direction of this link. In the present study, we hypothesized that implicit induction of religious ideas would result into less interest in and appreciation of erotic pictures. We also included religiosity as a potential moderator of the above hypothesized effects.

These questions were addressed in an experimental study completed by 81 subjects. Participants were randomly assigned to either a religious priming condition ( $n=39$ ) or a control one ( $n=42$ ). Afterwards, we measured the time participants spent watching on the lab computer pictures of people wearing (1) only underwear (erotic) or (2) clothes (dressed) as an implicit measure of erotic interest and asked participants to evaluate both kinds of pictures in order for us to have an explicit measure of erotic interest.

At the explicit level, religiously primed participants (vs. neutral) judged erotic pictures more negatively; this was true for both believers and non-believers. At the implicit level, non-believing participants in the religious priming condition watched less erotic pictures than dressed pictures, but this effect is not observed for believers. These results suggest that religious priming has an influence on sexuality, and that it can operate differently at the implicit and the explicit levels for believers and non-believers.



# INTRODUCTION

## BACKGROUND

Most religions have precepts that restrain sexuality

- Premarital sex
- Number of partners
- Goals of sex
- Contraception
- Sexual orientation
- ...



## PREVIOUS RESEARCH

### RELIGIOSITY // RESTRICTIVE SEXUAL ATTITUDES :

Conservative sexual attitudes (Beckwith et al., 2005)  
Homophobia (Brown et al. 2008)  
Negative view toward oral and anal sex (Davidson et al., 2004)

### RELIGIOSITY // RESTRICTIVE SEXUAL BEHAVIORS :

Abstinence (Helm et al., 2009)  
Few number of partners (Lefkowitz et al., 2004)  
Less premarital sex (Cochran et al., 1991)

## LIMITATIONS

- Sexual behavior measured mostly first sexual intercourse
- Self-reported attitudes and behaviors
- Correlational studies: causal direction?

▫ Aim :

BEHAVIORAL VALIDATION OF A CAUSAL DIRECTION :  
**RELIGIOSITY → LESS EROTIC INTEREST**

▫ Hypothesis :

**RELIGIOUS PRIMING DECREASES EROTIC INTEREST (AT BOTH EXPLICIT AND IMPLICIT LEVELS)**

## METHOD

### PARTICIPANTS :

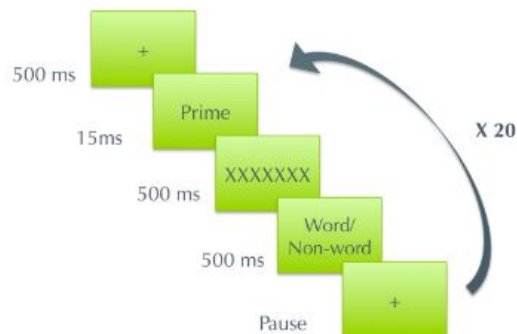
81 Belgians students in psychology; 90% females;  
*M* age : 19.06 (*SD* = 1.14); mostly Christians

### PROCEDURE :

participants were randomly assigned to conditions: neutral priming (i.e. 20 neutral words) (*N*=42) or religious priming (i.e. religion-related words) (*N*=39)

### PRIMING MANIPULATION :

Lexical decision word/ non-word  
 (Pichon & al. 2007)



### DEPENDENT VARIABLES: EROTIC INTEREST

#### 1. Implicit: watching-time of pictures



EROTIC  
 Pretest : high  
 sexy-attractive-  
 erotic (but not  
 pornographic)



NON-EROTIC  
 Pretest : low  
 sexy-attractive-  
 erotic (but not  
 pornographic)

#### 2. Explicit: appreciation of erotic (and non-erotic) pictures

- Positive (exciting-sexy)
- Negative (pornographic-shocking)

### POST-EXPERIMENTAL MEASURES

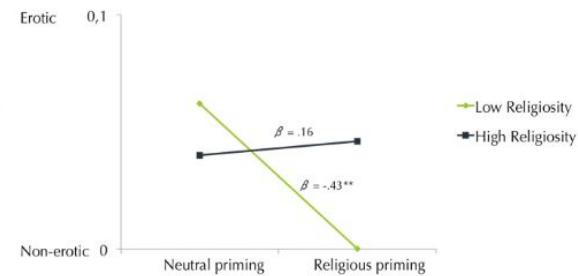
Religiosity: 3 items (Saroglou et al., 2008)

Spirituality: 1 item (Saroglou et al., 2008)

## RESULTS

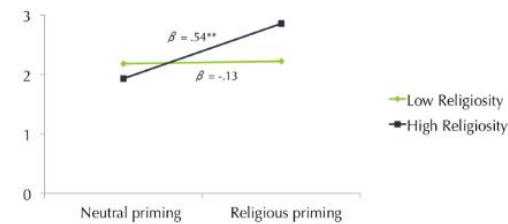
### IMPLICIT - DIFFERENTIAL OF WATCHING TIME

**Regression:** No main effect of condition on watching-time but watching-time of erotic pictures comparatively to non-erotic ones was lower in the religious priming condition for participants who were low in religiosity.

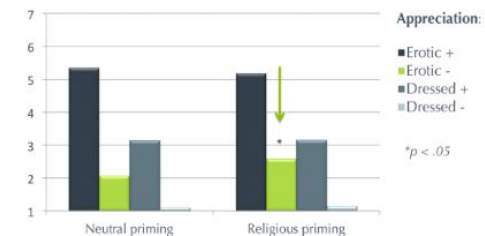


### EXPLICIT - NEGATIVE JUDGMENT OF PICTURES

**Regression:** Main effect of condition on negative judgment of erotic pictures. Participants in the religious priming condition who are high in religiosity were more likely to judge erotic pictures as "porno-shocking".



**ANOVAs:** The religious priming affects only the negative judgment of erotic pictures, not negative judgment of dressed pictures, nor positive judgment of erotic and dressed pictures.



## DISCUSSION

- **The findings suggest that religious priming has a different influence on believers and non-believers at both implicit and explicit levels. Indeed, concerning erotic interest, non-believers are affected by the religious priming at an implicit level while believers are affected at an explicit level.**

- Confirming our expectations, religious priming decreases appreciation of erotic pictures **at the explicit level**: this is due to participants who are high in religiosity.

- Moreover, partially in line with our expectations, at the **implicit level**, religious priming does not decrease the watching time of erotic pictures in general. However, when taking personal religiosity into account, religious priming decreases the watching time of erotic pictures compared to non-erotic ones for participants low in religiosity.

### LIMITATIONS AND FUTURE DIRECTION :

- Erotic interest : kind of sexual behavior, **replicate with other sexual behaviors**
- Sample : Low religiosity (*M* less than 3 on 7): Collect data on a **more religious sample**
- Investigate possible **mediators** (self-control; self-focus; hedonism)
- Extend results to **different religious affiliations**