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**Sexual Morality:  
Factor Structure, Individual Differences, and Cross-cultural Variation**

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**Sexual Morality:  
Factor Structure, Individual Differences, and Cross-cultural Variation**

**by**

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## **Dedication**

This dissertation is dedicated to the greatest inspiration, the most loyal friend, and the best mother a person could ask for: Jo Ann Asao. Without her guidance, I would not be the person I am today.

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**Sexual Morality:  
Factor Structure, Individual Differences, and Cross-cultural Variation**

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The University of Texas at Austin, 2017

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Abstract: Across every society there exist moral rules governing the sexual domain. Nonetheless, extant theories have largely ignored the domain of human conduct most heavily and universally moralized—sexual conduct. Across numerous studies, I investigate people’s intuitions about sexual morality, including individual and cross-cultural variation. The goals of the research program were threefold. First, this research created a comprehensive taxonomy of sexual moral behavior—the Sexual Morality Inventory. Factor analysis revealed distinct factors that we named the Seven Pillars of Sexual Morality. A second goal was to determine if variation in sexual morality could be predicted based on other key individual difference variables. Across two studies, I found that gender, religiosity, mating strategy, and personality predict individual differences in people’s moral codes of sexual conduct. Finally, in collaboration with researchers in 37 countries, I discovered which sexual acts are universally moralized (e.g., sexual coercion) and which vary from culture to culture (e.g., short-term sex). Collectively, this program of research is the first to comprehensively study sexual morality and contributes significantly to our understanding of morality and sexuality.

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## **Chapter 1: Introduction**

Morality—judgments about what is right and wrong—once the primary province of philosophy, has attracted increasing theoretical and research attention from psychologists. Sexual morality represents a subset of the moral domain, but an extremely important subset. It involves the moralization of behaviors that involve the sexual domain. Sexual morality involves two essential human traits, a fascination with sex and a concern for the moral behavior of ourselves and others. This chapter provides a brief introduction to these concepts.

People are fascinated by the sexual behavior of others. Our obsession with sex is predictable from an evolutionary perspective, given that in our species sexual reproduction is necessary for reproductive success and differential reproductive success is a primary ingredient in evolution by natural selection (Symons, 1979). Because humans evolved in small group settings with limited access to potential mates, other people's sexual conduct would have had a profound impact on their reproductive success. Ancestral humans needed to attend to, remember, and care about the sexual decisions of others. Although people are fascinated by the sex lives of others, some denigrate this fascination as being a sign of modern or Western lasciviousness. Yet scientifically, we have to ask why are people so interested in the sexual behavior of others and whether this is limited to the modern or local environment. An evolutionary perspective offers some insight into how people think and feel about third party sexual behavior.

People are motivated to gather information about other people's sexual behavior. In order to successfully pursue their mating interests, people must pay attention to the sexual relationships of both potential mates and sexual rivals. People need to be able to identify who is available and who is taken so as to not waste valuable time, energy, and other reproductive resources on a lost cause. Furthermore, reproductive success is linked to people's ability to successfully influence potential mates to choose them over sexual rivals. The derogation of

sexual competitors has been shown to be an effective strategy in human mate competition (Bendixen & Kennair, 2014; Buss & Dedden, 1990; Schmitt & Buss, 1996). For example, women damage the reputation of their sexual rivals by spreading information about their promiscuous sexuality. This is an example of individuals using social information about sexual behavior for strategic intrasexual competition. Research suggests that both men and women are willing to spread information about the promiscuity of their sexual rivals when competing for a long-term mate (Campbell, 2004).

People universally moralize the behaviors of themselves and others, with no known cultures that lack standards of morality (Brown, 1991). Gossip about morality dominates much of people's everyday conversations (Dunbar, 2004). Humans frequently judge the moral decisions of others, even when those decisions do not personally involve them (DeScioli & Kurzban, 2009). Morality is ubiquitous because morality likely evolved to serve two main functions: offering protection against exploitation by others within the group and facilitating group living in our highly social species.

First, socially imposed standards of morality constrain the behavior of others and thus provide protection against exploitation by others within one's social group (Krasnow, Cosmides, Pedersen, & Tooby, 2012; Petersen, 2013; Petersen, Sell, Tooby & Cosmides, 2012). People reward (or do not punish) others who adhere to principles of proper conduct, and punish or ostracize those who violate them (Algoe & Haidt, 2009; Balliet, Mulder, & Van Lange, 2011; Tooby, Cosmides, & Price, 2006). Building upon this previous research, we hypothesized the Fundamental Meta-theoretical Principle: people will moralize as bad conduct by others that inflicts fitness costs on them, their kin, their mates, their dyadic allies, and their coalition partners. Conversely, people will moralize as good conduct by others that confers fitness benefits on them, their kin, their mates, allies, and coalition. Although morality is universal across cultures, the specific moral rules vary importantly from culture to

culture (Henrich, 2016). For example, although food taboos are common, the specific foods that are off limits vary across cultures (Fessler & Navarrete, 2003)

Second, internalized moral standards provide a guide to a person's conduct, influencing individuals to act in ways that accord with the culturally agreed-upon principles and to avoid acting in ways that violate those principles (Mazar, Amir, & Ariely, 2008; Sperber & Baumard, 2012; Tomasello & Vaish, 2013). Once a society has established moral rules, this creates a new selection pressure: ostracism, condemnation and punishment by others in one's social group for violating social norms (Baumard, André, & Sperber, 2013). The increased likelihood of reputation damage, punishment, and ostracism from the group changes the costs of engaging in moralized behavior (Fehr & Fischbacher, 2004). People are motivated to learn and internalize these moral norms, such that they avoid receiving direct or indirect punishment from others (Buckholtz & Marois, 2012). One hypothesized function of moral conscience is to motivate people to forego immediate fitness gains in favor of delayed gains associated with cultivating a positive reputation and avoiding punishment in the group (Asao & Buss, 2015). Thus, conscience follows condemnation, and condemnation is determined by the culture-gene coevolution of moral norms. If people believe that it is immoral to cheat on their romantic partner, for example, this value might dissuade cheating even when there is the temptation to do so.

The goal of this dissertation is to employ an evolutionary perspective to uncover the nature of sexual morality and test predictions about sexual morality derived from evolutionary theory. We expect that some aspects of sexual morality, such as moralization of incest, will be grounded in principles of evolutionary biology and largely consistent across individuals and cultures. Other aspects of sexual morality, such as moralization of sex with outgroup members, will depend upon both cultural and individual inputs and will show large variation. Furthermore, we should be able to predict which individual-level and cultural-level

variables will covary with specific moral rules. For example, people who are high in psychopathy and tend to employ exploitative strategies may not moralize coercive sexual behavior as harshly as others. And cultures in which there is a high disease prevalence may moralize short-term, casual sex more harshly than less disease-prone cultures.

Because of its universality and importance for individual and social conduct, there has been tremendous scholarly attention to the topic of morality. The next chapter reviews the current literature on morality and sexual morality in particular.

## **Chapter 2: Previous Research on Morality**

Scientific theories of morality have become increasingly complex over time. Early theorists and even some recent theorists are properly described as ‘monist’ in that they reduce morality to a single principle such as ‘justice’ (Kohlberg & Hersh, 1977) or ‘fairness’ (Baumard et al., 2013). For example, some moral theorists have viewed morality as a unitary phenomenon, treating distinct components of moral reasoning and behavior as singular in nature, and hence amenable to a unitary explanatory framework. Perhaps most frequently, scientists treat morality as more or less synonymous with altruism or cooperation (Boyd & Richardson, 2009; Gintis, Bowles, Boyd & Fehr, 2003; Wilson, 2012). Studies demonstrating helping behavior in nonhuman primates provide the foundation for the argument that cooperation is the evolutionary root of morality (Tomasello & Vaish, 2013). Similarly, research has revealed that nonhuman animals and young children are primarily concerned with fairness (Bloom, 2013; Brosnan & de Waal, 2003; Range, Horn, Viranyi, & Huber, 2009). However, this does not necessarily indicate that altruism, fairness, or cooperation is the evolutionary root of morality.

In contrast, other researchers have taken the opposite approach, viewing morality as a multitude of distinct categories of cognitive mechanisms connected only loosely or terminologically (Graham, Haidt, & Koleva, 2013; Haidt & Joseph, 2004; Kohlberg & Hersh, 1977; Shweder, Much, Mahapartra, & Park, 1997; Stich, 2006). Others propose dual moral codes of morality, such as one for women’s morality that prioritizes care and protecting interpersonal relationships and another for men’s morality that is more individualistic and prioritizes individual rights and social justice (Gilligan, 1982). Yet others propose pluralistic theories that include five or six ‘foundations’ of morality, notably sanctity/degradation, care/harm, fairness/cheating, loyalty/betrayal, and authority/subversion (Graham et al., 2013; Haidt, 2012). For example, compassion and kindness evolved as a specific response to the

suffering of one's offspring. In the modern environment, compassion is extended to many other contexts including strangers and baby seals.

Research on morality has also highlighted apparent inconsistencies in moral judgments about moral dilemmas that show logically identical formal structures (e.g., being willing to flip a switch to kill one person in order to save five, but not being willing to push a heavy man to his death to produce the same effect) (Crockett, 2013). These developments have produced more complex, nuanced, and situationally contingent theories of morality.

### **GAP IN MORALITY RESEARCH**

Despite salutary developments, there is one domain of morality that has been largely ignored—sexual morality (Asao & Buss, 2016). This relative neglect is especially surprising since sexual morality is a good candidate for the domain of human conduct that is arguably more heavily moralized than any other conduct domain. Across every society there exist moral rules governing the sexual domain (Brown, 1991). Wherever there are written laws, they contain regulations about who can and cannot have sex with whom and who can and cannot marry whom.

From an evolutionary perspective, sexual behavior is so heavily moralized because nothing is closer to the vehicle of evolution by natural selection—differential reproductive success—than sexual behavior (Symons, 1979). There have been two notable exceptions to the neglect of sexual morality—moral prohibitions surrounding incest (Fessler & Navarrete, 2003; Lieberman, Fessler & Smith, 2011; Lieberman & Smith, 2012; Lieberman, Tooby, & Cosmides, 2003) and individual differences in morality surrounding homosexuality (Haidt & Hersh, 2001; Pinsof & Haselton, 2016; van Leeuwen, Miton, Firat, & Boyer, 2016). The goal of this series of studies is to provide a more comprehensive examination of morality surrounding the large and multifaceted domain of sexual conduct. However, we suggest that

any comprehensive theory of morality should be able to explain sexual morality in all of its dimensions, not merely incest and homosexuality.

### **WHY HAVE PRIOR THEORIES OF MORALITY IGNORED THE SEXUAL SPHERE?**

One reason for the lack of research on sexual morality may be historical accident—concern with morality has historically been the province of ethical philosophy, and in that tradition, the goal has been to identify abstract principles that apply *across* different domains of human conduct (e.g., Baumard, André, & Sperber, 2013; DeScioli, Asao, & Kurzban, 2012; Tomasello & Vaish, 2013; Trivers, 1971). This process of abstraction necessarily produces content-free moral principles, such as the omission effect. This domain-general approach may be reasonable as a starting point, but it can only take us so far. Morality is intrinsically tied to the content of human conduct, and in no domain is that more true than the sexual sphere. A more domain-specific approach to morality is necessary.



### **Chapter 3: Rationale behind The Current Studies**

This dissertation is designed to fill the gap in the scientific understanding of morality by answering several key questions: (1) What is the structure of sexual morality; that is, is sexual morality best captured by a single psychological dimension, or does it contain multiple psychological dimensions? (2) How does sexual morality differ across individuals? (3) Can individual differences in sexual morality be predicted from other psychological variables, such as more abstract moral principles, religiosity, political orientation, preferred mating strategy, and personality? (4) How does sexual morality vary cross-culturally, and is cultural variability predictable?

*What is the structure of sexual morality?*

The moralization of sexual behavior is likely universal in human groups. I suggest that the centrality of sexual morality is not accidental—nothing is closer to the engine of evolution by selection, differential reproductive success, than sexual behavior. Astonishingly, extant theories of morality have largely ignored this domain of human conduct most heavily and universally moralized. My research fills this large gap in the scientific literature by creating a taxonomy of sexual morality in an effort to discover the underlying structure of sexual morality.

*How does morality differ across individuals?*

One key research goal is to investigate individual differences in sexual morality. Though historically focused on human universals, the field of evolutionary psychology has increasingly attempted to tackle important individual differences. My research aims to discover the key individual differences variables that predict variation in moralization of sexual behaviors. Through this research, I have found evidence that sexual morality differs importantly across gender, religion, political orientations, personality characteristics, and preferred mating strategy. For example, people who score high on the dark triad traits (i.e.,

narcissism, Machiavellianism, and psychopathy) rate coercive sexual acts, such as sexual assault, as less morally wrong than those low in those traits.

*How does morality vary across cultures?*

This research program is designed to discover both the similarities and the differences in sexual morality across cultures. Recently, the oversampling of Western, educated, industrialized, rich, and democratic (W.E.I.R.D.) populations has been called into question (Henrich, Heine, & Norenzayan, 2010). My research examines sexual morality in a large, culturally diverse sample. In collaboration with researchers in 36 countries, I am currently analyzing data to discover which aspects of sexual morality are universal and which vary as a function of culture. By sampling from a wide range of populations, we seek to gain deeper insight into the diversity of human sexual mores. From an evolutionary perspective, we predict that some aspects of sexual morality, such as strong negative judgments about incest, will be universal. Other aspects of sexual morality are expected to vary predictably across cultures. For example, we predict that cultures with a high prevalence of parasites will more strongly condemn casual sex compared to cultures with a low parasite load.

*Summary*

Collectively, this program of research is the first to systematically study sexual morality based on cogent evolutionary principles and designed to answer simultaneously questions of universality, within-cultural individual differences, and cross-cultural variability. This research is designed to contribute greatly to our understanding of human morality, sexuality, and diversity. Through this program of research, we can begin to understand the bases for moral decision-making, including endogenous and environmental inputs, cognitive decision rules, and behavioral outputs.

## **Chapter 4: Structure of Sexual Morality**

In order to identify the core foundations of sexual morality, we began assembling a short (26-item) list of sexual deeds from multiple sources—laws, religious scriptures, and informal interviews (see Appendix A). We then asked participants (N= 161) to nominate sexual acts they believed were moralized as good or bad. Combining these two lists, we then assessed people’s personal standards of morality (N = 923). Principle components factor analysis yielded seven clear dimensions, which we label the Seven Pillars of Sexual Morality. Study 2 replicated the findings of Study 1.

The first goal of this suite of studies was to discover the factor structure of sexual morality. The second goal was to develop a research instrument, the Sexual Morality Inventory (SMI), which could be used to stimulate future research on sexual morality. Our final goal was to replicate the SMI.

### **PRELIMINARY STUDY: NOMINATING MORALIZED SEXUAL ACTIONS**

The goal of the preliminary study was to create the initial list of behaviors in the sexual domain that are moralized for men and for women. We used a nomination procedure that has been used in the past to capture domains of personality dispositions (Buss & Craik, 1983), evolution-based constructs such as acts of mate retention (Buss, 1988), and the many reasons people cite for why they have sex (Meston & Buss, 2007).

#### **Method**

##### *Participants*

161 participants (85 men, 76 women) were recruited from Amazon’s Mechanical Turk online worker recruitment system. Mean age was 34.64 ( $SD = 11.58$ ). Participants were compensated \$0.15 for the 10-minute survey.

##### *Act Nominations*

Each participant was asked to provide their age and sex, then was asked to nominate acts across four conditions: 1) list at least 5 acts that men might perform within the sexual realm that you consider to be morally bad, 2) list at least 5 acts that men might perform within the sexual realm that you consider to be morally good, 3) list at least 5 acts that women might perform within the sexual realm that you consider to be morally bad, 4) list at least 5 acts that women might perform within the sexual realm that you consider to be morally good.

Participants read the following instructions for each condition:

“For this question, we are interested in the behaviors or acts within the sexual or mating domain that are morally bad or wrong (*morally good or right*). Please think of acts that men (*women*) might perform that you consider to be sexually immoral—that is, morally bad (*moral—that is, morally good*). List at least five acts that a man (*woman*) might perform that you consider sexually immoral (*moral*). Please be as specific as possible.”

They were provided 10 lines for their nominations for each condition.

## **Results and Discussion**

The goal of the preliminary study was to create a list of behaviors that men and women could perform within the sexual domain that are viewed as either morally good or morally bad. Two researchers then independently went through the list of all items generated and compiled the items that were not conceptually redundant with the list of 26 items. All unique nominated acts were added to a list of 26 items that were generated from evolutionary theory for a total of 70 acts (see Appendix B). Studies 1 and 2 used this list of acts to create the Sexual Morality Inventory.

## **Studies 1 and 2: Identifying the Core Pillars of Sexual Morality and Replication of the Structure of Sexual Morality**

The goals of studies 1 and 2 were twofold: 1) to discover the underlying structure of sexual morality and 2) to develop the Sexual Morality Inventory by reducing the number of items for each factor. To do so, we asked participants to rate the morality of 70 sexual acts identified in the preliminary study. Because this research was exploratory in nature, we did not make any specific predictions about the number or content of the pillars of sexual morality, other than that we expected on evolutionary grounds that incest prohibitions would likely form one of these pillars. We employed exploratory factor analysis to organize the acts generated from the preliminary study into distinct factors to uncover the factor structure of sexual moral norms within U.S. culture.

### **STUDY 1: IDENTIFYING THE CORE PILLARS OF SEXUAL MORALITY**

The key goal of Study 1 was to obtain a large sample of participants to evaluate each of the individual acts that we previously identified as potentially sexually moralized on their personal judgments.

#### **Method**

##### *Participants*

923 participants (356 men, 565 women) were recruited from Amazon's Mechanical Turk online worker recruitment system. Mean age was 40.78 ( $SD = 13.31$ ). Participants were compensated \$0.25 for their participation in the 15-minute survey. Recruitment text asked participants to "Give us your judgments of events and behaviors. Please do NOT take this survey if you are under 18 years old or if you've taken the SMI before."

##### *Materials*

Recruitment and compensation were hosted through Amazon's Mechanical Turk online worker recruitment system. The survey was hosted through Qualtrics. Items were generated through an earlier act nomination procedure. For a complete list of items see

## *Procedure*

After electronically signing the informed consent, participants were asked to provide their personal moral judgments of 70 behaviors.

The instructions stated, “In this study, we are interested in your judgments of events and behaviors. Please evaluate if you believe the following to be morally right or good in your opinion OR morally wrong or bad in your opinion. There are no right or wrong answers. For some events and behaviors, your moral judgment may be the same for men and women; for others, your moral judgments may be different for men and women. Please use the scale below (ranging from -3 to +3) to provide your moral judgment of the acts.

Use this scale:

+3 = extremely morally good

+2 = moderately morally good

+1 = slightly morally good

0 = neither morally good nor morally bad

-1 = slightly morally bad

-2 = moderately morally bad

-3 = extremely morally bad”

For each behavior, participants made two judgments: one for a man and one for a woman. For example, participants would read the statement, “Having sex before marriage” and provide their moral judgments for a man having sex before marriage and for a woman having sex before marriage. Participants also completed two checks to ensure that they were reading the instructions and paying attention. Check 1: “For this question, please choose "+3 Extremely morally good" for both man and woman. This is to ensure that you are reading the instructions.” Check 2: “For this question, please choose "-1 Slightly morally bad" for man

and "+1 Slightly morally good" for woman. This is to ensure that you are reading the instructions.”

After completing the judgments, participants filled out a brief demographics questionnaire, providing their age, sex, and sexual orientation. All participants read a debriefing statement, were thanked for their participation, and were provided with a randomized code in order to receive payment.

## **Results**

### *Exploratory Factor Analysis*

We performed an exploratory factor analysis (EFA) on the 70 items that were generated through the preliminary act nomination study using principle components analysis (PCA). Since we had no theoretical basis for predicting the factor structure *a priori* (e.g., the number or content of the factors), we used PCA with the varimax rotation instead of confirmatory factor analysis. PCA is preferred over principle axis factoring when the goal is to reduce the total number of items. As this was exploratory in nature, both orthogonal principle components analysis using the varimax rotation and non-orthogonal exploratory factor analysis using the promax rotation were conducted. Additionally, since sex of both participant and actor revealed no qualitative differences, the sexes were combined prior to running the PCA.

Analyses revealed that there were 10 components whose eigenvalues were greater than the mean and the scree plot indicated that the optimal number of components was 7. Both orthogonal principle components analysis using the varimax rotation and non-orthogonal exploratory factor analysis using the promax rotation showed no qualitative differences (see Table 2). The seven factors of sexual morality were named: Short-term sex, Homosexual sex, Outgroup sex, Unfaithful sex, Romantic sex, Atypical sex, and Coercive Sex. Table 1 gives the items, means, standard deviations and reliabilities of the 7 factors. We

performed two statistical checks: Kaiser-Meyer-Olkin (KMO) test and Bartlett’s test of sphericity. Both tests indicated sufficient collinearity to run the factor analysis,  $KMO = .96$ ,  $x^2 = 76892.20$ ,  $p < .001$ .

Several items were eliminated based on a .50/.40 criterion; that is, any item (rounded) below a .50 factor loading within the category was eliminated and any item that loaded at .40 or higher on two categories was eliminated. We retained the highest loading and most theoretically representative items within each of the seven factors. There were 35 items that passed the quantitative and theory-driven criteria for inclusion.

Items	<i>M (SD)</i>	<i>α</i>	Eigen value	Proportion of variance
<b>Factor 1: Unfaithful Sex</b>	-2.12 (1.13)	.90	9.68	.12
1. Long emotional mate poach				
2. Emotional affair				
3. Sexual affair				
4. Long sexual mate poach				
5. Short sexual mate poach				
6. Sex with friend’s partner				
<b>Factor 2: Short-term Sex</b>	-0.92 (1.41)	.87	4.76	.10
7. Pay for sex				
8. Sex for money				
9. One-time sex				
10. Sex without love				
11. Reputation as easy				
12. Pornography				
<b>Factor 3: Coercive Sex</b>	-2.65 (.89)	.88	2.59	.10
13. Drug someone				
14. Rape				
15. Sex with mentally disabled				
16. Sex with intoxicated				
17. Verbal pressure				
<b>Factor 4: Outgroup Sex</b>	0.28 (1.11)	.81	1.61	.08
18. Marry different social class				
19. Sex with different ethnicity				
20. Sex with different race				
21. Marry different religion				
22. Marry different political				
<b>Factor 5: Romantic Sex</b>	1.80 (1.46)	.78	1.49	.08
23. Cuddling				
24. Saying “I love you”				
25. Partner sexually satisfied				
26. Sex to have a baby				
27. Honest about sexual history				
28. Remain sexually faithful				
<b>Factor 6: Homosexual Sex</b>	-0.42 (1.58)	.91	1.30	.08
29. Marry same sex				
30. Sex with same sex				
31. Kiss same sex				
<b>Factor 7: Atypical Sex</b>	-2.52 (.98)	.80	1.05	.07
32. Sex with dead				
33. Sex with animal				
34. Sex with sibling or parent				
35. Sex with cousin				

Notes.  $\alpha$  is Cronbach’s alpha.

Table 1: Items, Means (Standard Deviations), Alpha Reliability, Eigen value, and Pronortion of variance by Factor



Items	Factor 1 Unfaithful	Factor 2 Short-term	Factor 3 Coercive	Factor 4 Outgroup	Factor 5 Romantic	Factor 6 Homosexual	Factor 7 Atypical
1. Long emotional mate poach	.77 (.92)						
2. Emotional affair	.73 (.90)						
3. Sexual affair	.73 (.82)						
4. Long sexual mate poach	.74 (.81)						
5. Short sexual mate poach	.69 (.72)						
6. Sex with friend's partner	.63 (.66)						
7. Pay for sex		.78 (.86)					
8. Sex for money		.75 (.82)					
9. One-time sex		.72 (.74)					
10. Sex without love		.71 (.74)					
11. Reputation as easy		.69 (.73)					
12. Pornography		.62 (.60)					
13. Drug someone			.79 (.87)				
14. Rape			.77 (.85)				
15. Sex with mentally disabled			.75 (.81)				
16. Sex with intoxicated			.72 (.76)				
17. Verbal pressure			.65 (.67)				
18. Marry different social class				.80 (.83)			
19. Sex with different ethnicity				.80 (.81)			
20. Sex with different race				.79 (.80)			
21. Marry different religion				.70 (.69)			
22. Marry different political				.60 (.60)			
23. Cuddling					.77 (.83)		
24. Saying "I love you"					.71 (.76)		
25. Partner sexually satisfied					.69 (.73)		
26. Sex to have baby					.64 (.70)		
27. Honest about sexual history					.55 (.53)		
28. Remain sexually faithful					.52 (.51)		
29. Marry same sex						.87 (.92)	
30. Sex with same sex						.86 (.92)	
31. Kiss same sex						.84 (.89)	
32. Sex with dead							.77 (.84)
33. Sex with animal							.72 (.78)
34. Sex with sibling or parent							.69 (.72)
35. Sex with cousin							.59 (.60)

Notes. Loadings outside the parentheses were obtained using principal components analysis with varimax rotation and loadings inside the parentheses represent maximum likelihood analysis with promax rotation.

Table 2: Factor Loadings, Orthogonal PCA and Nonorthogonal EFA

### Seven Pillars of Sexual Morality

**Short-term Sex.** 6 items loaded onto the Short-term pillar. This factor involves engaging in sexual activity without a deep romantic attachment. Example item: "Having a one-time sexual encounter without commitment."

**Homosexual Sex.** 3 items loaded onto the Homosexual pillar. This factor involves engaging in same sex sexual encounters. Example item: "Having sex with someone of the same sex."

**Outgroup Sex.** 5 items loaded onto the Outgroup pillar. This factor involves

engaging in sexual activity with someone of a different social group (e.g., race, ethnicity, religion). Example item: “Having sex with someone of a different race.”

**Unfaithful Sex.** 6 items loaded onto the Unfaithful pillar. This factor involves emotional infidelity, sexual infidelity, and mate poaching (i.e., stealing someone else’s romantic partner). Example item: “While involved in a steady relationship, having a sexual affair with someone else.”

**Romantic Sex.** 6 items loaded onto the Romantic pillar. This factor involves sex within romantic relationships and emphasizes the procreative or intimacy-building functions of sex. Example item: “Cuddling with one’s romantic partner after sex.”

**Atypical Sex.** 4 items loaded onto the Atypical pillar. This factor involves sex that is considered abnormal or disgusting according to most cultural norms, such as paraphilias. Example item: “Having sex with one’s parent.”

**Coercive Sex.** 5 items loaded onto the Coercive Sex pillar. This factor involves coercive or non-consensual sexual activity. Example item: “Physically forcing someone to have sex against their will.”

In sum, principle components analysis yielded seven core factors of sexual morality. It is noteworthy that this seven-factor solution of morality in the sexual domain is more pluralistic (larger number of dimensions) and content-saturated (as opposed to content-free abstract principles) than any of the existing theories that purport to span the entire domain of morality.

## **STUDY 2: DOES THE SEVEN-FACTOR STRUCTURE OF SEXUAL MORALITY REPLICATE?**

The primary goal of study 2 was to determine the replicability of the factor structure uncovered in Study 1. A secondary goal was to finalize the Sexual Morality Inventory by adding theory-generated items to factors that had fewer than 5 items.

### *Participants*

543 participants (199 men, 344 women) were recruited from Amazon's Mechanical Turk online worker recruitment system. Mean age was 41.74 ( $SD = 13.75$ ). Participants were compensated \$0.50 for their participation in the 30-minute survey. Recruitment text asked participants to "Give us your judgments of events and behaviors. Please do NOT take this survey if you are under 18 years old or if you've taken the SMI before."

### *Materials and Procedure*

The materials and procedure were the same as in study 1, except that the participants provided moral judgments on the 35 items retained in Study 1 and an additional 3 items that were generated from theory for a total of 38 items. Two items were added to the Homosexual pillar: 1) "Having sexual relations with both men and women (e.g. bisexuality)" and 2) "Having sexual relations exclusively with someone of the same sex." One item within the Atypical pillar ("Having sex with one's sibling or one's parent") was split into two items: 1) "Having sex with one's sibling" and 2) "Having sex with one's parent."

### **Results**

Items	<i>M (SD)</i>	<i>α</i>	Eigen value	Proportion of variance
<b>Factor 1: Unfaithful Sex</b>	-2.09 (1.16)	.91	5.92	.11
1. Long emotional mate poach				
2. Emotional affair				
3. Sexual affair				
4. Long sexual mate poach				
5. Short sexual mate poach				
6. Sex with friend's partner				
<b>Factor 2: Short-term Sex</b>	-0.92 (1.38)	.86	2.88	.09
7. Pay for sex				
8. Sex for money				
9. One-time sex				
10. Sex without love				
11. Reputation as easy				
12. Pornography				
<b>Factor 3: Coercive Sex</b>	-2.64 (.91)	.87	1.81	.09
13. Drug someone				
14. Rape				
15. Sex with mentally disabled				
16. Sex with intoxicated				
17. Verbal pressure				
<b>Factor 4: Outgroup Sex</b>	0.31 (1.13)	.85	1.54	.08
18. Marry different social class				
19. Sex with different ethnicity				
20. Sex with different race				
21. Marry different religion				
22. Marry different political				
<b>Factor 5: Romantic Sex</b>	1.83 (1.41)	.77	1.04	.08
23. Cuddling				
24. Saying "I love you"				
25. Partner sexually satisfied				
26. Sex to have a baby				
27. Honest about sexual history				
28. Remain sexually faithful				
<b>Factor 6: Homosexual Sex</b>	-0.43 (1.62)	.95	10.38	.11
29. Marry same sex				
30. Sex with same sex				
31. Kiss same sex				
32. Exclusive same sex				
33. Bisexual				
<b>Factor 7: Atypical Sex</b>	-2.58 (.96)	.86	1.47	.08
34. Sex with dead				
35. Sex with animal				
36. Sex with sibling				
37. Sex with parent				
38. Sex with cousin				

Notes.  $\alpha$  is Cronbach's alpha.

Table 3: Items, Means (Standard Deviations), Alpha Reliability, Eigen value, and Proportion of variance by Factor

Items	Factor 1 Unfaithful	Factor 2 Short-term	Factor 3 Coercive	Factor 4 Outgroup	Factor 5 Romantic	Factor 6 Homosexual	Factor 7 Atypical
1. Long emotional mate poach	.76 (.89)						
2. Emotional affair	.73 (.86)						
3. Sexual affair	.74 (.81)						
4. Long sexual mate poach	.77 (.86)						
5. Short sexual mate poach	.68 (.69)						
6. Sex with friend's partner	.71 (.77)						
7. Pay for sex		.72 (.78)					
8. Sex for money		.70 (.77)					
9. One-time sex		.66 (.71)					
10. Sex without love		.69 (.77)					
11. Reputation as easy		.61 (.71)					
12. Pornography		.65 (.65)					
13. Drug someone			.78 (.91)				
14. Rape			.74 (.83)				
15. Sex with mentally disabled			.69 (.74)				
16. Sex with intoxicated			.65 (.73)				
17. Verbal pressure			.62 (.67)				
18. Marry different social class				.81 (.85)			
19. Sex with different ethnicity				.78 (.80)			
20. Sex with different race				.77 (.79)			
21. Marry different religion				.77 (.79)			
22. Marry different political				.65 (.69)			
23. Cuddling					.72 (.77)		
24. Saying "I love you"					.75 (.82)		
25. Partner sexually satisfied					.76 (.81)		
26. Sex to have baby					.58 (.63)		
27. Honest about sexual history					.49 (.48)		
28. Remain sexually faithful					.49 (.44)		
29. Marry same sex						.90 (.92)	
30. Sex with same sex						.89 (.89)	
31. Kiss same sex						.89 (.91)	
32. Exclusive same sex						.86 (.88)	
33. Bisexual						.83 (.79)	
34. Sex with dead							.82 (.89)
35. Sex with animal							.72 (.75)
36. Sex with sibling							.80 (.84)
37. Sex with parent							.66 (.63)
38. Sex with cousin							.56 (.53)

Notes. Loadings outside the parentheses were obtained using principal components analysis with varimax rotation and loadings inside the parentheses represent maximum likelihood analysis with promax rotation.

Table 4: Factor Loadings Orthogonal PCA

### Are the Seven Sexual Morality Pillars Replicable?

Running both orthogonal principle components analysis using the varimax rotation and non-orthogonal exploratory factor analysis using the promax rotation on the 38 items, the same 7 factors emerge with a qualitatively and quantitatively similar factor structure. Analyses revealed that there were 7 components whose eigenvalues were greater than the mean and the scree plot indicated that the optimal number of components was 7. Table 3 gives the items, means, standard deviations and reliabilities of the 7 factors. Two items within the Romantic Sex pillar loaded onto the factor at .49 using the varimax rotation and thus barely failed to meet the .5 criterion. Factor loadings for both orthogonal principle

components analysis using the varimax rotation and non-orthogonal exploratory factor analysis using the promax rotation were similar (see Table 4). Again, the statistical checks were passed, Kaiser-Meyer-Olkin (KMO) test,  $KMO = .92$  and Bartlett's test of sphericity,  $\chi^2 = 26675.59, p < .001$ .

### **Which Individual Sexual Acts Are Most Heavily Moralized?**

Table 5 lists the items from worst (most negative) to best (most positive) and provides the full wording of each item. As expected from the cultural universality of the incest taboo and as predicted by some evolutionary theories (e.g., Lieberman et al., 2003), having sex with a parent and having sex with a sibling were among the most morally condemned sexual acts. Acts of sexual coercion were also among the most morally condemned, including forcing someone to have sex against their will (the top-rated act), drugging someone to have sex with them, and having sex with a mentally disabled or intoxicated individuals who are incapable of giving sexual consent. Mate poaching and sexual betrayal also emerged toward the top of the most morally condemned sexual actions (e.g., having sex with a friend's romantic partner or with someone who is married while their spouse is out of town).

At the other end of the spectrum, sexual acts seen as morally good included: Remaining sexually faithful to one's romantic partner and making sure one's romantic partner is sexually satisfied—acts all loading on the Romantic Sex factor.

Items (full text)	<i>M (SD)</i>
Physically forcing someone to have sex against their will	-2.79 (0.83)
Having sex with an animal	-2.78 (0.71)
Drugging a person in order to have sex with them	-2.74 (0.91)
Having sex with someone who is mentally disabled so they cannot give consent	-2.73 (0.81)
Having sex with one's parent	-2.71 (0.85)
Having sex with a dead body	-2.71 (0.82)
Having sex with one's sibling	-2.65 (0.92)
Having sex with someone who is too intoxicated to know what is going on	-2.55 (0.94)
Verbally pressuring someone into having sex against their will	-2.4 (0.99)
Having sex with a friend's romantic partner	-2.3 (1.08)
Having a brief sexual encounter with a married person when their partner is out of town	-2.29 (1.04)
While involved in a steady relationship, having a sexual affair with someone else	-2.28 (1.02)
Having an ongoing sexual affair with someone who is already in a steady relationship with someone else	-2.16 (1.07)
Having sex with one's cousin	-2.08 (1.25)
Having an ongoing emotional affair with someone who is already in a steady relationship with someone else	-1.78 (1.19)
While involved in a steady relationship, having an emotional affair with someone else	-1.74 (1.37)
Having sex with someone because they offered to pay money	-1.51 (1.34)
Paying someone money to have sex with them	-1.42 (1.36)
Having a reputation as an easily-accessible sexual partner	-1.02 (1.37)
Having sexual relations with both men and women (e.g. bisexual sexuality)	-0.58 (1.50)
Having a one-time sexual encounter without commitment	-0.56 (1.26)
Watching pornography	-0.52 (1.34)
Having sex with someone of the same sex	-0.49 (1.58)
Having sex with someone without being in love with them	-0.49 (1.23)
Passionately kissing someone of the same sex	-0.37 (1.59)
Marrying someone of the same sex	-0.37 (1.68)
Having sexual relations exclusively with the same sex	-0.32 (1.70)
Marrying someone whose political views are strongly opposed to one's own	0.10 (0.97)
Marrying someone from a different religious group	0.26 (1.19)
Having sex with someone of a very different ethnic group	0.33 (1.19)
Having sex with someone of a different race	0.43 (1.18)
Marrying someone from a very different social class	0.45 (1.09)
Having sex with one's partner in order to have a baby	1.11 (1.65)
Cuddling with one's romantic partner after sex	1.73 (1.44)
Telling one's romantic partner "I love you" during sex	1.82 (1.32)
Being honest about one's sexual history (e.g. the number or identity of one's previous sexual partners)	1.87 (1.32)
Making sure one's romantic partner is sexually satisfied	1.99 (1.23)
Remaining sexually faithful to one's romantic partner	2.49 (1.10)

Table 5: Items from Worst (Most Negative) to Best (Most Positive), Means and SDs

### Which Sexual Morality Pillars Show the Largest Individual Differences?

Table 5 also reveals which sexual acts show the largest individual differences in moral judgment, as opposed to which are consensually seen as morally good or bad. These

individual differences are best revealed by the magnitude of the standard deviation for each item—the larger the standard deviation, the greater the individual differences in moral judgments. The acts showing the largest standard deviations all involve homosexual sex—having sex with someone of the same sex (SD = 1.58), passionately kissing someone of the same sex (1.59), and marrying someone of the same sex (1.68). The second cluster showing large individual differences involve sexual economics or exchanges of sex for money—Paying someone to have sex (1.36) and having sex because someone offered money to do so (1.34). The third cluster showing large individual differences involve short-term sex, such as having a one-time sexual encounter without commitment (1.26) and having sex without being in love with the person (1.23). Other notable individual items showing large standard deviations involve outgroup sex, such as having sex with someone of a different ethnic group (1.19), different religious group (1.19), or different race (1.18). The act of having sex with a cousin also showed fairly large individual differences (1.25).

These studies are limited in several respects. First, we do not currently know why some factors, such as Homosexual Sex, Short-Term Sex, and Outgroup Sex show such large individual differences. Which individual difference measures influence people's moral norms? Religiosity, political orientation, and personality variables may predict individual differences in sexual morality.

Second, the studies were conducted within one culture, and likely most individuals within our samples would be classified as WEIRD (Western, Educated, Industrialized, Rich, and Democratic). Cross-cultural tests are needed to evaluate whether the seven factors of sexual morality are universal or culture-specific, as well as whether the consensually moralized factors in our samples (good and bad) are equally sexually moralized in other cultures.

The remaining studies are designed to address these limitations.



## *Summary*

Most extant theories of morality have ignored the sexual domain. The current research was designed to fill this gap. A preliminary study (N = 161) used a nomination procedure that identified 70 distinct acts or instances in the sexual morality domain. Study 1 (N = 923) identified seven core factors of sexual morality—Unfaithful Sex, Short-Term Sex, Romantic Sex, Homosexual Sex, Outgroup Sex, Coercive Sex, and Atypical Sex. Study 2 (N = 543) replicated this seven-factor solution. We use the highest loading items on each factor to develop the Sexual Morality Inventory, which shows excellent factor replicability and internal consistency reliability across both studies.

## **Chapter 5: Individual Differences in Sexual Morality**

From the first suite of studies, it became clear that, at least in America, there existed large individual differences in people's sexual morality. Certain categories of behavior, namely Homosexual Sex and Short-term Sex, showed large standard deviations in moral judgments across participants. To our knowledge, there are very few studies examining the factors that can predict intra-individual variation in morality—especially sexual morality. Why, within a given culture, would the moral norms vary so greatly? Previous research has investigated the roles that religiosity and political orientation play in people's attitudes toward homosexuality and promiscuous sex. Do differences in religiosity and political orientation account for variation in the other pillars of sexual morality? Can we predict *a priori* which individual difference variables will co-vary systematically with moral judgments of each pillar based on principles of evolutionary psychology?

Using the Fundamental Meta-theoretical Principle mentioned earlier (i.e. that people will moralize as bad conduct by others that decreases their inclusive fitness and will moralize as good conduct by others that increases their inclusive fitness), we created a series of predictions to investigate whether intra-individual variation in sexual morality can be predicted by theoretically relevant individual differences variables. Study 1 tested these predictions using all 70 sexual behaviors discovered in the act nomination study. In Study 2, we used our newly developed Sexual Morality Inventory to replicate the findings of Study 1. The primary goal of these studies was to investigate whether and how religiosity, political orientation, sociosexual orientation, dark triad traits, Life history theory, personality, and Moral Foundations Theory can be used to explain differences in people's sexual morality.

**STUDY 1: CAN WE PREDICT VARIATION IN SEXUAL MORALITY BASED ON OTHER KEY INDIVIDUAL DIFFERENCE VARIABLES?**

## **Moral Foundations Theory**

Moral Foundations Theory (MFT) posits that variation in morality can be explained by differences in the importance that people place upon five evolved moral foundations: Harm, Fairness, Loyalty, Authority, and Purity. Based upon MFT, we generated 14 predictions about how reliance upon the Moral Foundations would covary with individual moralization of the Seven Pillars of Sexual Morality.

### *Short-term Sex*

People who are concerned with the moral foundations of Loyalty, Authority, and Purity are more likely to be both religious and conservative (Graham, Haidt, & Nosek, 2009; Haidt & Hersh, 2001). Religiosity is associated with a restricted sociosexual orientation, meaning that religious people tend to have beliefs, attitudes, and desires that promote a long-term mating strategy (Weeden & Kurzban, 2013). Other people's short-term sexual behaviors could strategically interfere with the goals of long-term mates in several ways: (1) for long-term mates who are not in a relationship, short-term mates limit their ability to find and keep a long-term mate; (2) once a long-term mate is in an established relationship, there is the fear that short-term mates are more likely to engage in mate poaching, which would threaten existing relationships; and (3) short-term sex is a disease vector that can infect potential mates.

People with a concern for the moral foundation of Authority will rely heavily on the culturally established moral norms when judging the behavior of others. According to many religions, short-term sex is prohibited. This culturally endorsed mandate could be designed to restrict the mating behaviors of the ingroup toward long-term mateships (Kurzban, 2010). People with a concern for the moral foundation of Purity believe that some things are wrong because they are impure or degrading, such as promiscuous sexual behavior.

*Short-term Sex and Loyalty:* As concern for Loyalty increases, Short-term Sex will be judged more morally wrong.

*Short-term Sex and Authority:* As concern for Authority increases, Short-term Sex will be judged more morally wrong.

*Short-term Sex and Purity:* As concern for purity increases, Short-term Sex will be judged more morally wrong.

### *Homosexual Sex*

People who show strong ingroup favoritism tend to show outgroup prejudice, such as homophobia. Same-sex sexual activity by oneself, one's partner, or one's kin negatively impacts reproductive success. Many long-standing cultural institutions endorse behaviors that happen to increase inclusive fitness (e.g., marriage and having children) and prohibit behaviors that decrease inclusive fitness (e.g., homosexuality).

A concern for moral foundations that focus on the group (i.e., Loyalty, Authority, and Purity) over foundations that focus on the individual (i.e., Harm and Fairness) predicts negative attitudes toward gay men (Rosik, Dinges, & Saavedra, 2013). Within small male-only coalitions, homosexual sex might undermine the unity and cohesion of the coalition because sexual activity distracts from superordinate goals and sexual rivalry within the coalition can disrupt coordinated action. People who respect authority figures are more likely to moralize homosexual sexual behavior on the basis of religious mandates, even when no harm is done. Furthermore, those who value purity may judge homosexual sex as more morally wrong because they view it as "unnatural" and therefore impure.

*Homosexual Sex and Loyalty:* As concern for Loyalty increases, Homosexual Sex will be judged more morally wrong.

*Homosexual Sex and Authority:* As concern for Authority increases, Homosexual Sex will be judged more morally wrong.

*Homosexual Sex and Purity:* As concern for purity increases, Homosexual Sex will be judged more morally wrong.

### *Unfaithful Sex*

People pursuing unfaithful sex present strategic interference with one's own long-term mateships and the mateships of one's kin and allies. Sexual infidelity could lead to a variety of costs to one's reproductive fitness, from termination of the existing relationship and all economic, social, and sexual benefits therein to sexually transmitted disease (Buss, 2000). Unfaithful sex, including mate poachers, undermines unity and cohesion of one's coalition by creating sexual rivalries within coalition. Moralization of infidelity and mate poaching allows one to enlist mateguards, such as one's friends and family, to defend against relationship interlopers. If everyone in the culture holds these moral norms, then people no longer need to be physically present to engage in mate guarding. We predict that people who are very concerned with group-oriented foundations of loyalty, authority, and purity will negatively moralize infidelity. People concerned with the harm caused to others will view unfaithful sex as costly and exploitative and, therefore, morally wrong. People who prioritize fairness are expected to see infidelity as a violation of the social contract.

*Unfaithful Sex and Loyalty:* As concern for Loyalty increases, Unfaithful Sex will be judged more morally wrong.

*Unfaithful Sex and Authority:* As concern for Authority increases, Unfaithful Sex will be judged more morally wrong.

*Unfaithful Sex and Purity:* As concern for Purity increases, Unfaithful Sex will be judged more morally wrong.

*Unfaithful Sex and Harm:* As concern for Harm increases, Unfaithful Sex will be judged more morally wrong.

*Unfaithful Sex and Fairness:* As concern for Fairness increases, Unfaithful Sex will be judged more morally wrong.

### *Atypical Sex*

Incest by kin, coalition members, and allies corrupts fitness qualities of resultant offspring. Incest by one's children or other genetic relatives directly impairs inclusive fitness. Having sex with animals or dead bodies acts as a disease vector and will be considered morally wrong by those who have a concern for Purity since atypical sexual acts will be seen as degrading or unnatural. Additionally, anyone willing to commit these forms of low base-rate deviant acts would be statistically more likely to commit other deviant acts, and corrupt their value as a kin member, mate, or ally.

*Atypical Sex and Purity:* As concern for purity increases, Short-term Sex will be judged more morally wrong.

### *Coercive Sex*

Sexual coercion by anyone in one's social group inflicts fitness costs on all kin and allies. Sexual coercion bypasses free mate-choice from the victim, interfering with a core evolved mating strategy. Sexual coercion is also linked with damage to the victim's self-esteem, self-perceived attractiveness, self-perceived mating desirability, social reputation, and sexual functioning (Perilloux, Duntley, & Buss, 2012). Due to the heavy costs associated with sexual assault, coordinated moralization of coercive sex would help to lower the likelihood of being a victim by increasing the costs of sexual coercion and damaging the reputations of assaulters. We hypothesized that those who emphasize the importance of harm when making moral decisions would negatively moralize coercive sex due to the physical, emotional, social, and psychological damage that is inflicted upon the victims. Because individually determined mate-choice is bypassed by sexual coercion, we hypothesized that people who care about fairness will judge predatory sexual behaviors more harshly.

*Coercive Sex and Harm:* As concern for Harm increases, Coercive Sex will be judged more morally wrong.

*Coercive Sex and Fairness:* As concern for Fairness increases, Coercive Sex will be judged more morally wrong.

## **Religiosity**

In our American sample, the dominant religion is Christianity with 70.6% identifying as Christian (Pew Research Center, 2014). Many religions, including Christianity, endorse restrictive sexual practices and prohibit profligate sexual behaviors. Intrinsic religiosity is associated with decreased sociosexuality and a desire for fewer lifetime sex partners (Rowatt & Schmitt, 2003). Christianity traditionally proscribes the same sex sexual behaviors that characterize Homosexual Sex, although acceptance is growing among almost all Christian groups (Pew Research Center, 2014). Christians are prohibited from marrying non-Christians, which is a component of Outgroup Sex. Additionally, it forbids sexual affairs and mate poaching (e.g., coveting thy neighbor's wife) found in Unfaithful Sex. Since religious individuals care about sanctity, impure or degrading sexual activities (e.g. sex with animals) will be viewed harshly. Finally, religiosity is positively correlated with more restrictive (long-term) sexual views (Weeden & Kurzban, 2013).

*Short-term Sex:* People who are more religious will judge Short-term Sex *more morally wrong* than those who are less religious.

*Homosexual Sex:* People who are more religious will judge Homosexual Sex *more morally wrong* than those who are less religious.

*Unfaithful Sex:* People who are more religious will judge Unfaithful Sex *more morally wrong* than those who are less religious.

*Outgroup Sex:* People who are more religious will judge Outgroup Sex *more morally wrong* than those who are less religious.

*Atypical Sex:* People who are more religious will judge Atypical Sex *more morally wrong* than those who are less religious.

*Coercive Sex:* We do not expect that religiosity will be correlated with judgments of Coercive Sex.

*Romantic Sex:* People who are more religious will judge Romantic Sex *more morally good* than those who are less religious.

### **Political Orientation**

Political conservatives tend to be more religious than political liberals. Therefore, many predictions are similar to those for religiosity. Conservatives also care more strongly about the Moral Foundation of Purity, which encompasses the belief that issues of purity/sanctity are important when making moral decisions (Haidt & Hersh, 2001). We expect that conservatism will be correlated with negative views about restricted sexuality, including short-term sex and unfaithful sex. American conservatives tend to be less accepting of homosexuality than liberals, which can be partially explained by underlying differences in mating strategies of conservatives and liberals (Pinsof & Haselton, 2016). Furthermore, conservatives are more disgust-sensitive than liberals (Inbar, Pizarro, & Bloom, 2009) and disgust-sensitivity is linked to implicit disapproval of homosexuality (Inbar, Pizarro, Knobe, & Bloom, 2009). Since atypical sexual acts, such as incest, evoke disgust, we expect that conservatives will view atypical acts more harshly.

*Short-term Sex:* People who are politically conservative will judge Short-term Sex *more morally wrong* than those who are liberal.

*Homosexual Sex:* People who are politically conservative will judge Homosexual Sex *more morally wrong* than those who are liberal.

*Unfaithful Sex:* People who are politically conservative will judge Unfaithful Sex *more morally wrong* than those who are liberal.



*Outgroup Sex:* People who are politically conservative will judge Outgroup Sex *more morally wrong* than those who are liberal.

*Atypical Sex:* People who are politically conservative will judge Atypical Sex *more morally wrong* than those who are liberal.

*Coercive Sex:* We do not expect that political orientation will be correlated with judgments of Coercive Sex.

*Romantic Sex:* We do not expect that political orientation will be correlated with judgments of Romantic Sex.

### **Sociosexual Orientation**

A person's sociosexual orientation is an index of their propensity to engage in unrestricted sexual activity (Simpson & Gangestad, 1991). High SOI is correlated with having a short-term mating strategy. People who pursue a short-term mating strategy potentially interfere with the interests of those pursuing a long-term mating strategy (low SOI). For people with low SOI who are not in a relationship, short-term mates limit their ability to find and keep long-term mates. In studies of derogation of competitors, women (who tend to be long-term oriented) denigrate other women for promiscuous sexual activity. Additionally, once someone with low SOI is in an established relationship, there is the fear of mate poachers, which would threaten existing relationships. Unrestricted sociosexual orientation is associated with increased likelihood of infidelity (Mattingly, Clark, Weidler, Bullock, Hackathorn, & Blankmeyer, 2011). People also implicitly associate homosexuality with an unrestricted sociosexual orientation (Pinsof & Haselton, 2016).

*Short-term Sex:* As SOI increases, Short-term Sex will be judged *less morally wrong*.

*Homosexual Sex:* As SOI increases, Homosexual Sex will be judged *less morally wrong*.

*Unfaithful Sex:* As SOI increases, Unfaithful Sex will be judged *less morally wrong*.

*Outgroup Sex:* We do not expect that SOI will be correlated with judgments of Outgroup Sex.

*Atypical Sex:* As SOI increases, Atypical Sex will be judged *less morally wrong*.

*Coercive Sex:* We do not expect that SOI will be correlated with judgments of Coercive Sex.

*Romantic Sex:* We do not expect that SOI will be correlated with judgments of Romantic Sex.

### **Dark Triad**

The traits of narcissism (i.e. self-centeredness), Machiavellianism (i.e. strategically manipulative), and psychopathy (i.e. impulsive anti-sociality) make up the Dark Triad. Dark Triad traits have been hypothesized to predict both short-term and exploitative sexual behavior, such as coercion (Jonason, Girgis, & Milne-Home, 2017). Those scoring high in narcissism are expected to prioritize their own sexual desires over the needs and feelings of others. Narcissism may show a strong relationship with moral judgments of unfaithful sex. Machiavellianism has been linked to manipulative sexual strategies, such as infidelity and using deception to gain sexual access (Brewer & Abell, 2015; Jonason, Lyons, Baughman & Vernon, 2014) and may be strongly associated with favoring a short term mating strategy (Jonason, Li, Webster, Schmitt, 2009). Psychopathy is associated with self-reported coercion to obtain sex, such as blackmail and physical violence (Figueredo, Gladden, Sisco, Patch, Jones, 2015; Jones & Olderbak, 2014). Psychopathy is also associated with all types of sexual fantasies, even deviant ones (Baughman, Jonason, Veselka, & Vernon, 2014). Narcissism, Machiavellianism, and psychopathy were positively correlated with rape myth acceptance and empathy for rapists (Jonason, Girgis, & Milne-Home, 2017)

*Short-term Sex:* As narcissism, Machiavellianism, and psychopathy increase, Short-term Sex will be judged *less morally wrong*

*Homosexual Sex:* We do not expect that narcissism, Machiavellianism, or psychopathy will be correlated with judgments of Homosexual Sex.

*Unfaithful Sex:* As narcissism, Machiavellianism, and psychopathy increase, Unfaithful Sex will be judged *less morally wrong*

*Outgroup Sex:* We do not expect that narcissism, Machiavellianism, or psychopathy will be correlated with judgments of Outgroup Sex.

*Atypical Sex:* As narcissism, Machiavellianism, and psychopathy increase, Atypical Sex will be judged *less morally wrong*

*Coercive Sex:* As narcissism, Machiavellianism, and psychopathy increase, Coercive Sex will be judged *less morally wrong*

*Romantic Sex:* We do not expect that narcissism, Machiavellianism, or psychopathy will be correlated with judgments of Romantic Sex.

### **Life history theory**

Life history theory (LHT) describes the fundamental trade-off in allocating reproductively relevant resources to either immediate or delayed reproduction. Organisms that expect a short lifespan would increase their lifetime reproductive success by pursuing frequent and immediate mating opportunities, while those that expect a long lifespan should delay reproduction to accrue resources to allocate toward future mating opportunities and parental investment (Figueredo et al., 2006, Griskevicius, Delton, Robertson, & Tybur, 2011). LHT predicts that unpredictability and environmental harshness at a young age can calibrate whether people devote their resources to either a fast or slow life history strategy. Fast life history strategies are correlated with increased short-term mating orientation (Jonason, Koenig, & Tost, 2010), and willingness to engage in sexual coercion (Dunkel & Mathes, 2011).

*Short-term Sex:* People with a slower life history will judge Short-term Sex *more morally wrong* than those with a faster life history.

*Homosexual Sex:* We do not expect that life history strategy will be correlated with judgments of Homosexual Sex.

*Unfaithful Sex:* People with a slower life history will judge Unfaithful Sex *more morally wrong* than those with a faster life history.

*Outgroup Sex:* We do not expect that life history strategy will be correlated with judgments of Outgroup Sex.

*Atypical Sex:* People with a slower life history will judge Atypical Sex *more morally wrong* than those with a faster life history.

*Coercive Sex:* People with a slower life history will judge Coercive Sex *more morally wrong* than those with a faster life history.

*Romantic Sex:* People with a slower life history will judge Romantic Sex *more morally good* than those with a faster life history.

## **Personality**

### *Short-term Sex*

Openness to experience is one of the Big Five personality factors. Those high in openness tend to be creative, non-traditional, and curious about novel experiences and ideas. Creativity has been associated with an increased number of lifetime partners (Nettle & Clegg, 2006). Agreeableness is the personality factor often associated with cooperation, consideration, and compassion. For example, those high in agreeableness tend to be more forgiving of wrongdoing (Hilbig, Theilmann, Klein, Henninger, 2016). Honesty-Humility is a factor of the HEXACO model of personality. People high in Honesty-Humility are not inclined to break societal rules. However, agreeableness and Honesty-Humility are positively associated with a restricted sociosexual orientation (Bale & Archer, 2013; Bourdage, Lee,

Ashton, & Perry, 2007). Following the rationale given earlier, those pursuing a long-term (restricted) mating strategy are better off moralizing short-term sexual behavior. Thus, contrary to the popular view of people who score high in agreeableness and Honesty-Humility, we predict that they will judge short-term sex more harshly than those low in these traits. Across a 52 nations, extraversion predicted promiscuity (Schmitt, 2004). Thus, those pursuing a short-term strategy would benefit from changing the moral societal norms by viewing these actions as morally neutral or morally good.

*Short-term Sex and Openness:* As openness increases, Short-term Sex will be judged less morally wrong.

*Short-term Sex and Extraversion:* As extraversion increases, Short-term Sex will be judged less morally wrong.

*Short-term Sex and Agreeableness:* As agreeableness increases, Short-term Sex will be judged more morally wrong

*Short-term Sex and Honesty-Humility:* As honesty-humility increases, Short-term Sex will be judged more morally wrong

### *Homosexual Sex*

Openness to experience has been associated with more accepting attitudes toward gay men (Barron, Struckman-Johnson, Quevillon, & Banka, 2008; Cullen, Wright, & Alessandri, 2002).

*Homosexual Sex and Openness:* As openness increases, Homosexual Sex will be judged less morally wrong.

### *Unfaithful Sex*

People low in agreeableness tend not to employ exploitative strategies, instead focusing on cooperative strategies. Low agreeableness has been shown to be associated with

infidelity (Schmitt, 2004). We expect those high in the trait of Honesty-Humility to not employ exploitative mating strategies, such as infidelity.

*Unfaithful Sex and Agreeableness:* As agreeableness increases, Unfaithful Sex will be judged more morally wrong

*Unfaithful Sex and Honesty-Humility:* As honesty-humility increases, Unfaithful Sex will be judged more morally wrong

### *Atypical Sex*

We expect those high in the trait of Honesty-Humility to proscribe atypical mating behavior since they are unlikely to deviate from societal rules.

*Atypical Sex and Honesty-Humility:* As honesty-humility increases, Atypical Sex will be judged more morally wrong

### *Coercive Sex*

We expect those high in the trait of Honesty-Humility to not employ exploitative mating strategies, such as sexual coercion. Previous research found that the Honesty-Humility personality trait is associated with decreased likelihood to sexually harass others (Lee, Gizzarone, & Ashton, 2003).

*Coercive Sex and Honesty-Humility:* As honesty-humility increases, Coercive Sex will be judged more morally wrong

## **Method**

### *Participants*

312 participants (127 men, 185 women) were recruited from Amazon's Mechanical Turk online worker recruitment system. Mean age was 41.00 ( $SD = 13.47$ ). Participants were compensated \$0.50 for their participation in the 30-minute survey. Recruitment text asked participants to "Give us your judgments of events and behaviors. Please do NOT take this survey if you are under 18 years old or if you've taken the SMI before." MTurk workers have

been shown to be a reliable, representative sample of the population (Buhrmester, Kwang, & Gosling, 2011).

### *Procedure*

Participants also completed two checks to ensure that they were reading the instructions and paying attention (same as in Chapter 4). After completing the judgments, participants filled out a brief demographics questionnaire, providing their age, sex, and sexual orientation. They then completed several individual difference questionnaires (listed under Measures). All participants read a debriefing statement, were thanked for their participation, and were provided with a randomized code in order to receive compensation.

### *Measures*

**Sexual Morality Inventory:** Items were taken from the Sexual Morality Inventory developed in Chapter 4. Participants were asked to provide their personal moral judgments of 70 behaviors on a -3 to +3 Likert scale (-3: *extremely morally bad*; +3: *extremely morally good*). For each behavior, participants made two judgments: one for a man and one for a woman. Items represented the 7 Pillars of sexual morality: Short-term Sex, Homosexual Sex, Outgroup Sex, Unfaithful Sex, Romantic Sex, Atypical Sex, and Coercive Sex. For example, participants would read the statement, “Watching pornography” and provide their moral judgments for a man watching pornography and for a woman watching pornography. For a complete list of items see Appendix C.

**Moral Foundations:** MFQ30, 30-item Moral Foundations Questionnaire. This scale asks participants to read a series of moral considerations and report how much that consideration is relevant to determining whether something is right or wrong (0- *not at all relevant* to 5- *extremely relevant*). There are 5 items for each of the moral foundations of Harm, Fairness,

Loyalty, Authority, and Sanctity. A sample consideration for Harm is “whether or not someone suffered emotionally.”

**Religiosity:** One item on religiosity: “How important is religion in your life?” (*1- not at all to 7- the most important thing*).

**Political orientation:** One item on political orientation: “Please describe your own political view” (*1- very liberal to 7- very conservative*).

**Sociosexual Orientation Inventory:** Revised Sociosexual Orientation Inventory (SOI-R). This instrument is designed to measure individual differences in sociosexual orientation (SOI) or people’s propensity to enter into sexual relationships without the emotional component (Penke & Asendorpf, 2008). Higher SOI indicates a stronger orientation toward short-term mating whereas a low SOI indicates a stronger orientation toward long-term mating. The Revised Sociosexual Inventory tests across the three sub-facets of sociosexuality: behavior, attitudes, and desire.

**Life History Strategy:** In order to reduce participant fatigue, we used the short form of the Arizona Life History Battery (Figueredo et al., 2006). The Mini-K measures individual differences in life history strategy on a continuum from fast (low K) to slow (high K). A fast history strategy is characterized by discounting future gains in favor of immediate benefits. A slow life history strategy is characterized by delaying reproductive success now in pursuit of increased reproductive success over the course of the lifespan.



**Personality:** The Mini-IPIP, a 20-item form of the International Personality Item Pool (Donnellan, Oswald, Baird, & Lucas, 2006). This research instrument measures the Big 5 factors of Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Participants were asked to read statements and indicate how much the statement is accurate about their

**Dark Triad:** We included the Dirty Dozen measurement tool, a 12-item measure of Dark Triad personality traits: Narcissism, Machiavellianism, and Psychopathy (Jonason & Webster, 2010). An example item from the Machiavellianism subfacet is “I tend to manipulate others to get my way” (*1- strongly disagree to 9- strongly agree*).

**Honesty-Humility:** We included the Honesty-Humility subdimension of the HEXACO model of personality which measures individual differences across four subfacets: Sincerity, Fairness, Greed Avoidance, and Modesty (Ashton & Lee, 2009). Participants were asked how much they agreed with statements such as “I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed” on a 1-5 scale (*1- strongly disagree to 5- strongly agree*).

## **Results**

We ran separate one-way regressions for each of the Seven Pillars of Sexual Morality on the individual difference measures, controlling for age and economic situation. We report standardized regression coefficients that can be interpreted as effect sizes. Because we ran a large number of analyses, a conservative alpha level of .001 was used for all statistical analyses.

## **Sex of actors**

Because participants gave their moral judgments for a male actor and a female actor for each sexual behavior, we ran separate paired t-tests to investigate the effect of sex of actor on moral judgments. There was a statistically significant difference in moral judgments for a man engaging in Homosexual Sex ( $M = -0.35$ ,  $SD = 1.46$ ) compared to a woman ( $M = -0.25$ ,  $SD = 1.43$ ),  $t(310) = -5.45$ ,  $p < .001$ , Cohen's  $d = 0.21$ . There was a statistically significant difference in moral judgments for a man engaging in Coercive Sex ( $M = -2.73$ ,  $SD = 0.47$ ) compared to a woman ( $M = -2.59$ ,  $SD = 0.64$ ),  $t(310) = -3.69$ ,  $p < .001$ , Cohen's  $d = 0.31$ .

For summary of all sex of actor analyses see Table 6.

	Male Actor $M$ ( $SD$ )	Female Actor $M$ ( $SD$ )	$t$ ( $d$ )
Coercive Sex	-2.73 (0.47)	-2.59 (0.64)	-5.45*** (.31)
Atypical Sex	-2.49 (0.68)	-2.47 (0.70)	-1.48
Unfaithful Sex	-2.15 (0.79)	-2.12 (0.82)	-1.08
Short-term Sex	-0.77 (1.00)	-0.77 (1.01)	0.15
Homosexual Sex	-0.35 (1.46)	-0.20 (1.43)	-3.69*** (.21)
Outgroup Sex	0.30 (0.94)	0.27 (0.93)	0.81
Romantic Sex	1.90 (0.95)	1.86 (0.92)	1.69

Note. Means (and standard deviations) of ratings for male actors and female actors. Sex differences with Cohen's  $d$  in parentheses, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

Table 6: Sex differences for male and female actors

### Sex of participants

We ran Welch independent samples t-tests to investigate the effect of participant sex on moral judgments. Overall, female participants judged sexual behaviors more morally wrong than male participants. All judgments were in the same direction. There was a statistically significant sex difference in moral judgments of Short-term Sex,  $t(310) = 5.25$ ,  $p < .001$ , Cohen's  $d = 0.60$ ; Unfaithful Sex,  $t(310) = 3.84$ ,  $p < .001$ , Cohen's  $d = 0.46$ ; Atypical Sex,  $t(310) = 3.57$ ,  $p < .001$ , Cohen's  $d = 0.43$ ; and Coercive Sex  $t(310) = 3.96$ ,  $p < .001$ , Cohen's  $d = 0.49$ . For summary of all sex of participant analyses see Table 7.

	Male Participant <i>M (SD)</i>	Female Participant <i>M (SD)</i>	<i>t (d)</i>
Coercive Sex	-2.54 (0.59)	-2.79 (0.38)	3.96*** (.49)
Atypical Sex	-2.31 (0.75)	-2.60 (0.59)	3.57*** (.43)
Unfaithful Sex	-1.92 (0.87)	-2.82 (0.67)	3.84*** (.46)
Short-term Sex	-0.44 (0.90)	-1.00 (0.96)	5.25*** (.60)
Homosexual Sex	-0.25 (1.36)	-0.29 (1.43)	0.25
Outgroup Sex	0.28 (0.96)	0.29 (0.85)	-0.03
Romantic Sex	1.78 (0.95)	1.95 (0.88)	-1.55

*Note.* Means (and standard deviations) of ratings for male raters and female participants. Sex differences with Cohen's *d* in parentheses, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

Table 7: Sex differences for male and female participants

### Moral Foundations Theory

#### *Coercive Sex*

As predicted, concern for Harm ( $\beta = -.34$ ,  $t(308) = -5.74$ ,  $p < .001$ ) and Fairness ( $\beta = -.40$ ,  $t(308) = -6.81$ ,  $p < .001$ ) predicted moral judgments of Coercive Sex. Additionally, Harm (Adj.  $R^2 = .10$ ,  $F(3, 308) = 12.49$ ,  $p < .001$ ) and Fairness (Adj.  $R^2 = .13$ ,  $F(3, 308) = 17.06$ ,  $p < .001$ ) explained a significant proportion of variance. Unexpected analyses revealed that Purity ( $\beta = -.17$ ,  $t(308) = -3.30$ ,  $p < .001$ ) predicted moral judgments of Coercive Sex.

#### *Atypical Sex*

As predicted, concern for Purity predicted moral judgments of Atypical Sex,  $\beta = -.47$ ,  $t(308) = -9.59$ ,  $p < .001$  and explained a significant proportion of variance, Adj.  $R^2 = .24$ ,  $F(3, 308) = 34.15$ ,  $p < .001$ . Unexpected analyses revealed Harm ( $\beta = -0.23$ ,  $t(308) = -3.48$ ,  $p < .001$ ), Loyalty ( $\beta = -.39$ ,  $t(308) = -6.49$ ,  $p < .001$ ), and Authority ( $\beta = -.42$ ,  $t(308) = -7.04$ ,  $p < .001$ ) predicted moral judgments of Atypical Sex. Harm (Adj.  $R^2 = .05$ ,  $F(3, 308) = 6.83$ ,  $p < .001$ ), Loyalty (Adj.  $R^2 = .13$ ,  $F(3, 308) = 17.12$ ,  $p < .001$ ), and Authority (Adj.  $R^2 = .15$ ,  $F(3, 308) = 19.67$ ,  $p < .001$ ) also explained a significant proportion of variance.

#### *Unfaithful Sex*

As predicted, concern for Harm ( $\beta = -.33$ ,  $t(308) = -5.00$ ,  $p < .001$ ), Fairness ( $\beta = -.39$ ,  $t(308) = -5.79$ ,  $p < .001$ ), Loyalty ( $\beta = -.26$ ,  $t(308) = -3.90$ ,  $p < .001$ ), Authority ( $\beta = -$

.30,  $t(308) = -4.62, p < .001$ ), and Purity ( $\beta = -.38, t(308) = -6.97, p < .001$ ) predicted moral judgments of Unfaithful Sex. Harm (Adj.  $R^2 = .07, F(3, 308) = 9.19, p < .001$ ), Fairness (Adj.  $R^2 = .10, F(3, 308) = 12.04, p < .001$ ), Loyalty (Adj.  $R^2 = .05, F(3, 308) = 5.90, p < .001$ ), Authority (Adj.  $R^2 = .06, F(3, 308) = 7.97, p < .001$ ), and Purity (Adj.  $R^2 = .13, F(3, 308) = 17.09, p < .001$ ) also explained a significant proportion of variance.

#### *Short-term Sex*

As predicted, concern for Loyalty ( $\beta = -.41, t(308) = -6.69, p < .001$ ), Authority ( $\beta = -.44, t(308) = -7.27, p < .001$ ), and Purity ( $\beta = -.59, t(308) = -12.76, p < .001$ ) predicted moral judgments of Short-term Sex. Furthermore, Loyalty (Adj.  $R^2 = .15, F(3, 308) = 19.39, p < .001$ ), Authority (Adj.  $R^2 = .17, F(3, 308) = 22.19, p < .001$ ), and Purity (Adj.  $R^2 = .36, F(3, 308) = 60.23, p < .001$ ) also explained a significant proportion of variance.

#### *Homosexual Sex*

As predicted, concern for Loyalty ( $\beta = -.30, t(308) = -3.97, p < .001$ ), Authority ( $\beta = -.42, t(308) = -5.64, p < .001$ ), and Purity ( $\beta = -.54, t(308) = -8.87, p < .001$ ) predicted moral judgments of Homosexual Sex. Loyalty (Adj.  $R^2 = .07, F(3, 308) = 8.43, p < .001$ ), Authority (Adj.  $R^2 = .11, F(3, 308) = 13.94, p < .001$ ), and Purity (Adj.  $R^2 = .22, F(3, 308) = 30.02, p < .001$ ) also explained a significant proportion of variance.

#### *Outgroup Sex*

There were no statistically significant associations between Outgroup Sex and the Moral Foundations.

#### *Romantic Sex*

Concern for Harm ( $\beta = .27, t(308) = 4.52, p < .001$ ), Fairness ( $\beta = .26, t(310) = 4.30, p < .001$ ) and Loyalty ( $\beta = .23, t(308) = 3.90, p < .001$ ) predicted moral judgments of Romantic Sex. Also, concern for Harm (Adj.  $R^2 = .06, F(3, 308) = 7.73, p < .001$ ), Fairness

(Adj.  $R^2 = .06$ ,  $F(3, 308) = 7.07$ ,  $p < .001$ ), and Loyalty (Adj.  $R^2 = .05$ ,  $F(3, 308) = 5.97$ ,  $p < .001$ ) explained a significant proportion of variance.

For a summary of all Moral Foundation analyses, see Table 8.

	Harm	Fairness	Loyalty	Authority	Purity
Coercive	<b>-.34***</b>	<b>-.40***</b>	-.09	-.12	-.17**
Atypical	<b>-.23***</b>	-.21**	<b>-.39***</b>	<b>-.42***</b>	<b>-.47***</b>
Unfaithful	<b>-.33***</b>	<b>-.39***</b>	<b>-.26***</b>	<b>-.30***</b>	<b>-.38***</b>
Short-term	-.09	-.07	<b>-.41***</b>	<b>-.44***</b>	<b>-.59***</b>
Homosexual	.10	.09	<b>-.30***</b>	<b>-.42***</b>	<b>-.54***</b>
Outgroup	.12	.03	.01	-.09	-.02
Romantic	<b>.27***</b>	<b>.26***</b>	<b>.23***</b>	.18**	.16**

Note. Standardized  $\beta$  of regression of Moral Foundations on each Pillar, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , bold numbers are statistically significant.

Table 8: Regression of Moral Foundations on the Seven Pillars

### Religiosity

As predicted, religiosity predicted moral judgments of Short-term Sex ( $\beta = -.42$ ,  $t(310) = -10.94$ ,  $p < .001$ ), Homosexual Sex ( $\beta = -.42$ ,  $t(310) = -8.58$ ,  $p < .001$ ), Unfaithful Sex ( $\beta = -.21$ ,  $t(310) = -4.65$ ,  $p < .001$ ), and Atypical Sex ( $\beta = -.24$ ,  $t(310) = -5.53$ ,  $p < .001$ ). Religiosity also explained a significant proportion of variance for Short-term Sex (Adj.  $R^2 = .30$ ,  $F(1, 310) = 45.30$ ,  $p < .001$ ), Homosexual Sex (Adj.  $R^2 = .21$ ,  $F(1, 310) = 28.29$ ,  $p < .001$ ), Unfaithful Sex (Adj.  $R^2 = .06$ ,  $F(1, 310) = 8.05$ ,  $p < .001$ ), and Atypical Sex (Adj.  $R^2 = .10$ ,  $F(1, 310) = 13.15$ ,  $p < .001$ ). Also as predicted, religiosity did not predict judgments of Coercive Sex ( $\beta = -.13$ ,  $ns$ ). Contrary to our predictions, religiosity did not predict moral judgments of Outgroup Sex ( $\beta = -.04$ ,  $ns$ ) or Romantic Sex ( $\beta = .04$ ,  $ns$ ).

### Political Orientation

As predicted, political orientation predicted moral judgments of Short-term Sex ( $\beta = -$

Atypical Sex ( $\beta = -.16, t(310) = -3.79, p < .001$ ). Political Orientation also explained a significant proportion of variance in Short-term Sex (Adj.  $R^2 = .21, F(1, 310) = 28.41, p < .001$ ), Homosexual Sex (Adj.  $R^2 = .28, F(1, 310) = 40.72, p < .001$ ), and Atypical Sex (Adj.  $R^2 = .06, F(1, 310) = 7.62, p < .001$ ). As expected, political orientation showed no statistically significant relationship with moral judgments of Coercive Sex ( $\beta = -.03, ns$ ) or Romantic Sex ( $\beta = .03, ns$ ). Contrary to predictions, political orientation did not predict moral judgments of Unfaithful Sex ( $\beta = -.14, ns$ ) and Outgroup Sex ( $\beta = -.12, ns$ ).

### **Sociosexual Orientation**

As predicted, SOI predicted moral judgments of Short-term Sex ( $\beta = .59, t(310) = 10.68, p < .001$ ), Homosexual Sex ( $\beta = .47, t(310) = 6.46, p < .001$ ), Unfaithful Sex ( $\beta = .43, t(310) = 6.84, p < .001$ ), and Atypical Sex ( $\beta = .26, t(310) = 4.11, p < .001$ ). SOI also explained a significant proportion of variance in Short-term Sex (Adj.  $R^2 = .29, F(1, 310) = 43.43, p < .001$ ), Homosexual Sex (Adj.  $R^2 = .14, F(1, 310) = 17.35, p < .001$ ), Unfaithful Sex (Adj.  $R^2 = .13, F(1, 310) = 16.50, p < .001$ ), and Atypical Sex (Adj.  $R^2 = .07, F(1, 310) = 8.48, p < .001$ ). As expected, SOI showed no statistically significant relationship with moral judgments of Outgroup Sex ( $\beta = .06, ns$ ), Romantic Sex ( $\beta = .07, ns$ ) or Coercive Sex ( $\beta = -.11, ns$ ).

### **Dark Triad**

#### *Coercive Sex*

As predicted, narcissism ( $\beta = .29, t(310) = 6.22, p < .001$ ) and psychopathy ( $\beta = .35, t(310) = 7.75, p < .001$ ) predicted moral judgments of Coercive Sex. Narcissism (Adj.  $R^2 = .11, F(1, 310) = 14.45, p < .001$ ) and psychopathy (Adj.  $R^2 = .17, F(1, 310) = 21.67, p < .001$ ) also explained a significant proportion of variance. Contrary to prediction, Machiavellianism did not predict moral judgments of Coercive Sex ( $\beta = .13, ns$ ).

#### *Atypical Sex*

As predicted, psychopathy ( $\beta = .27, t(310) = 5.34, p < .001$ ) predicted moral judgments of Atypical Sex and explained a significant proportion of variance (Adj.  $R^2 = .10, F(1, 310) = 12.45, p < .001$ ). Contrary to prediction, narcissism ( $\beta = .17, ns$ ) and Machiavellianism did not predict moral judgments of Atypical Sex ( $\beta = 0.03, ns$ ).

#### *Unfaithful Sex*

As predicted, narcissism ( $\beta = .32, t(310) = 6.20, p < .001$ ) and psychopathy ( $\beta = .32, t(310) = 6.19, p < .001$ ) predicted moral judgments of Unfaithful Sex. Narcissism (Adj.  $R^2 = .11, F(1, 310) = 13.72, p < .001$ ) and psychopathy (Adj.  $R^2 = .11, F(1, 310) = 13.65, p < .001$ ) also explained a significant proportion of variance. Contrary to prediction, Machiavellianism did not predict moral judgments of Unfaithful Sex ( $\beta = 0.09, ns$ ).

#### *Short-term Sex*

As predicted, narcissism ( $\beta = .28, t(310) = 5.50, p < .001$ ) and psychopathy ( $\beta = .22, t(310) = 4.24, p < .001$ ) predicted moral judgments of Short-term Sex. Narcissism (Adj.  $R^2 = .11, F(1, 310) = 14.40, p < .001$ ) and psychopathy (Adj.  $R^2 = .08, F(1, 310) = 10.15, p < .001$ ) also explained a significant proportion of variance. Contrary to prediction, Machiavellianism did not predict moral judgments of Short-term Sex ( $\beta = 0.00, ns$ ).

#### *Homosexual Sex*

As predicted, psychopathy ( $\beta = .07, ns$ ), Machiavellianism ( $\beta = -.05, ns$ ) and narcissism ( $\beta = .13, ns$ ) did not significantly predict moral judgments of Homosexual Sex.

#### *Outgroup Sex*

As expected, narcissism ( $\beta = -.02, ns$ ), Machiavellianism ( $\beta = -.06, ns$ ) and psychopathy ( $\beta = .00, ns$ ) showed no statistically significant relationship with moral judgments of Outgroup Sex.

#### *Romantic Sex*

As expected, narcissism ( $\beta = -.09$ , *ns*), Machiavellianism ( $\beta = .01$ , *ns*), and psychopathy ( $\beta = -.13$ , *ns*) showed no statistically significant relationship with moral judgments of Romantic Sex.

### **Life history theory**

As predicted, life history strategy predicted moral judgments of Short-term Sex ( $\beta = -.39$ ,  $t(310) = -4.60$ ,  $p < .001$ ), Unfaithful Sex ( $\beta = -.39$ ,  $t(310) = -4.43$ ,  $p < .001$ ), Atypical Sex ( $\beta = -.56$ ,  $t(310) = -6.97$ ,  $p < .001$ ), Coercive Sex ( $\beta = -.33$ ,  $t(310) = -4.16$ ,  $p < .001$ ), and Romantic Sex ( $\beta = .34$ ,  $t(310) = 4.34$ ,  $p < .001$ ). Life history strategy also explained a significant proportion of variance in Short-term (Adj.  $R^2 = .09$ ,  $F(1, 310) = 11.26$ ,  $p < .001$ ), Unfaithful Sex (Adj.  $R^2 = .06$ ,  $F(1, 310) = 7.39$ ,  $p < .001$ ), Atypical Sex (Adj.  $R^2 = .15$ ,  $F(1, 310) = 19.31$ ,  $p < .001$ ), Coercive Sex (Adj.  $R^2 = .06$ ,  $F(1, 310) = 7.23$ ,  $p < .001$ ), and Romantic Sex (Adj.  $R^2 = .06$ ,  $F(1, 310) = 7.20$ ,  $p < .001$ ). As predicted, life history strategy did not predict moral judgments of Homosexual Sex ( $\beta = -.24$ , *ns*) and Outgroup Sex ( $\beta = .01$ , *ns*).

For a summary of the individual difference measure analyses, see Table 9.



	Religiosity	Political Orientation	SOI	Dark Triad	Life History
Coercive	-.13**	-.03	.11	.40***	-.33***
Atypical	-.24***	-.16***	.26***	.24***	-.56***
Unfaithful	-.21***	-.14**	.43***	.38***	-.39***
Short-term	-.42***	-.34***	.59***	.26***	-.39***
Homosexual	-.42***	-.48***	.47***	.08	-.24*
Outgroup	-.04	-.12*	.06	-.04	.01
Romantic	.04	.03	.07	-.11	.34***

Note. Standardized  $\beta$  of regression of individual difference variables on each Pillar, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

Table 9: Regression of Individual Difference Variables on the Seven Pillars

### Personality

#### *Coercive Sex*

As predicted, Honesty-Humility predicted moral judgments of Coercive Sex ( $\beta = -.32$ ,  $t(310) = -4.75$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .07$ ,  $F(1, 310) = 9.00$ ,  $p < .001$ ). Unexpectedly, agreeableness ( $\beta = -.23$ ,  $t(310) = -4.80$ ,  $p < .001$ ) predicted moral judgments of Coercive Sex and explained a significant proportion of variance (Adj.  $R^2 = .07$ ,  $F(1, 310) = 9.17$ ,  $p < .001$ ).

#### *Atypical Sex*

As predicted, Honesty-Humility predicted moral judgments of Atypical Sex ( $\beta = -.24$ ,  $t(310) = -3.32$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .05$ ,  $F(1, 310) = 6.47$ ,  $p < .001$ ). Unexpectedly, agreeableness ( $\beta = -.21$ ,  $t(310) = -4.02$ ,  $p < .001$ ) also predicted moral judgments of Atypical Sex and explained a significant proportion of variance (Adj.  $R^2 = .07$ ,  $F(1, 310) = 8.22$ ,  $p < .001$ ).

### *Unfaithful Sex*

As predicted, agreeableness ( $\beta = -.22, t(310) = -4.11, p < .001$ ) and Honesty-Humility ( $\beta = -.30, t(310) = -4.01, p < .001$ ) predicted moral judgments of Unfaithful Sex. Agreeableness (Adj.  $R^2 = .05, F(1, 310) = 6.45, p < .001$ ) and Honesty-Humility (Adj.  $R^2 = .05, F(1, 310) = 6.18, p < .001$ ) also explained a significant proportion of variance.

### *Short Term Sex*

As predicted, openness ( $\beta = .20, t(310) = 3.53, p < .001$ ) predicted moral judgments of Short-term Sex and explained a significant proportion of variance (Adj.  $R^2 = .07, F(1, 310) = 8.23, p < .001$ ). Contrary to prediction, extraversion ( $\beta = .02, ns$ ), agreeableness ( $\beta = -.13, ns$ ), and Honesty-Humility ( $\beta = -.24, ns$ ) did not predict moral judgments of Short-term Sex.

### *Homosexual Sex*

Contrary to prediction, openness did not predict moral judgments of Homosexual Sex ( $\beta = .19, ns$ ).

### *Outgroup Sex*

None of the OCEAN personality traits predicted moralization of Outgroup Sex.

### *Romantic Sex*

None of the OCEAN personality traits predicted moralization of Outgroup Sex.

For a summary of all personality analyses, see Table 10.

	O	C	E	A	N	Honest
Coercive	-.12*	-.11*	.01	<b>-.23***</b>	.12*	<b>-.32***</b>
Atypical	-.06	-.11	-.11*	<b>-.21***</b>	.10	<b>-.24***</b>
Unfaithful	.03	-.13*	.04	<b>-.22***</b>	.08	<b>-.30***</b>
Short-term	<b>.20***</b>	-.14*	.02	-.13*	.08	-.24**
Homosexual	.19**	-.14*	.03	.08	.10	-.09
Outgroup	-.02	-.13	.00	.08	.11	.01
Romantic	.05	.06	.04	.14**	-.06	.08

Note. Standardized  $\beta$  of regression of personality on each Pillar, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

Table 10: Regression of Personality on the Seven Pillars

## Discussion

Overall, 83% of the predictions set forth using evolutionary theorizing and theories from the individual differences literature were supported by the data. Results from Study 1 suggest that we can predict variation in sexual morality based on other key psychological variables, such as religiosity, political orientation, mating strategy, and personality. Furthermore, some of the effect sizes are particularly impressive by typical social science standards. For example, the links between moralization of Short-term Sex and mating strategy were very strong ( $\beta = .59$ ). The links between moralization of Atypical Sex and life history strategy were also quite strong ( $\beta = -.56$ ). As were the links between moralization of Homosexual Sex and concern with the moral foundation of Purity ( $\beta = -.59$ ). However, given the large number of statistical analyses run, these results in isolation should be interpreted cautiously even after using the more conservative alpha threshold of .001. The goal of Study 2 was to replicate Study 1 using the finalized form of the Sexual Morality Inventory, allowing us to test the replicability and robustness of the effects found in Study 1.

## **Study 2: Are the Links between Individual Difference Variables and Sexual Morality Replicable?**

The primary goal of Study 2 was to attempt to replicate the findings of Study 1 using the Sexual Morality Inventory developed in Chapter 4. This allows us to determine if the direction and magnitude of the effects are consistent across the two studies. If so, this would suggest that the findings are replicable and reflect something real about our underlying psychology. A secondary goal of Study 2 was to investigate theory-driven individual difference variables not included in Study 1. Specifically, we included a measure of previous sexual experience and a measure of disgust-sensitivity. Rationale and predictions for these new individual difference variables are given below.

### *Rationale and Predictions*

#### **Sexual Experience**

Overall, we expect individuals to positively moralize sexual behaviors that facilitate their ability to implement their preferred mating strategies. There are three distinct arguments. First, people will negatively moralize behaviors that impede their preferred mating strategies (Asao & Buss, 2016). Second, people will negatively moralize behaviors that they view as deviant. People's past sexual behaviors are both unlikely to be detrimental to their preferred behavior strategies and unlikely to be considered deviant. Third, people will want to positively moralize sexual and mating behaviors that they themselves engage in, since creating social norms for those behaviors will provide social justification for their own actions, and hence minimize the costs others will inflict on them for their sexual conduct. Thus, previous sexual experience should generally be associated with more positive moralization of those sexual behaviors.

Exceptions would be instances in which individuals were the victims of someone else's sexual behaviors. For example, if someone had been previously cheated on, we expect

someone who was publicly exposed for committing a sexual moral transgression, and is seeking to ‘repent’ or present a social reputation as having seen the ills of their conduct and have reformed, so will not engage in such action in the future (Rothschild & Keefer, 2017).

*Short-term Sex:* Previous sexual experience with group sex, partner exchange, masturbation and use of erotic materials will be associated with more positive moralization of short-term sex.

*Homosexual Sex:* Previous homosexual sexual experience will be associated with more positive moralization of homosexual sex.

*Unfaithful Sex Actor:* Previous experience cheating on one’s partner or mate poaching another’s partner will be associated with more *positive* moralization of unfaithful sex.

*Unfaithful Sex Victim:* Previous experience being cheated on or being the victim of attempted mate poaching will be associated with more *negative* moralization of unfaithful sex.

### **Disgust sensitivity**

Emotions act as superordinate mechanisms designed to motivate individuals in different ways (Tooby & Cosmides, 2008). Disgust originally evolved to motivate the avoidance of pathogens and people, places, and events associated with pathogens (Tybur, Lieberman, Kurzban, & DeScioli, 2012). Pathogen disgust is likely the moral emotion driving negative moralization of certain classes of sexual behaviors. Specifically, we predict that disgust is driving negative moralization of Short-term Sex, Homosexual Sex, and Atypical Sex because those types of sexual behavior are high-risk disease vectors. Widespread short-term sex increases the likelihood that a potential mate will carry a sexually transmitted disease that could infect oneself, one’s kin, or one’s allies. Homosexual sex was historically associated with increased likelihood of specific sexually transmitted infections, such as HIV. Certain sexual behaviors within atypical sex factor (i.e., sex with animals and sex with dead

bodies) would have acted as disease vectors. Disgust toward these types of sexual behaviors would motivate individuals to avoid sexual acts that had a higher probability of spreading communicable disease. Conversely, we predict that anger, not disgust, is driving negative moralization of coercive sex. Unlike disgust, anger motivates approach behaviors, not avoidance. Coercive sex causes harm to the victim and should motivate approach behaviors, such as intervention and direct punishment of the assaulter by the victim's family and friends. Jealousy is likely the emotion driving negative moralization of unfaithful sex, so we do not expect that disgust plays a large role in moralization of this factor. Disgust-sensitivity is an index of the degree to which one is easily disgusted.

*Short-term Sex:* Greater disgust-sensitivity will be associated with more negative moralization of short-term sex.

*Homosexual Sex:* Greater disgust-sensitivity will be associated with more negative moralization of homosexual sex.

*Unfaithful Sex:* Greater disgust-sensitivity will not be associated with moralization of unfaithful sex.

*Atypical Sex:* Greater disgust-sensitivity will be associated with more negative moralization of atypical sex (particularly, necrophilia and bestiality).

*Coercive Sex:* Greater disgust-sensitivity will *not* be associated with moralization of coercive sex.

## **Method**

### *Participants*

387 participants (116 men, 171 women) were recruited from Amazon's Mechanical Turk online worker recruitment system. Mean age was 39.88 ( $SD = 12.23$ ). Participants were compensated \$1.00 for their participation in the 30-minute survey. Recruitment text asked

participants to “Give us your judgments of events and behaviors. Please do NOT take this survey if you are under 18 years old or if you've taken the SMI before.”

### *Procedure*

The procedure was the same as in Study 1, except with the removal of the Mini IPIP measure of the Big Five personality variables and the addition of two new measures: Sexual Attitudes and Experiences Scale and Disgust Scale. After completion of the survey, participants read a debriefing statement, were thanked for their participation, and were provided with a randomized code in order to receive compensation.

### *New Measures*

**Sexual Experience:** We used the Sexual Attitudes and Experiences Scale (SAES) (Tobin, 2011). This scale was developed as a measure of past sexual experiences focused on college students, including frequency questions involving increasing degrees of intimate sexual contact between members of the same and the opposite sex.

**Disgust sensitivity:** The Disgust Scale-Revised (Haidt, McCauley & Rozin, 1994, modified by Olatunji et al. 2007) was used to measure individual differences in propensity to become easily disgusted. The Disgust Scale is widely used and has been well validated (Olatunji, Haidt, McKay, & David, 2008).

### **Results**

We ran separate one-way regressions for each of the Seven Pillars of Sexual Morality on the individual difference measures, controlling for age and economic situation. We report standardized regression coefficients that can be interpreted as effect sizes. Because we ran a large number of analyses, a conservative alpha level of .001 was used for all statistical analyses.

### **Sex of actors**

Because participants gave their moral judgments for a male actor and a female actor for each sexual behavior, we ran separate paired t-tests to investigate the effect of sex of actor on moral judgments. Women were judged slightly more negatively than men across two pillars. There was a statistically significant difference in moral judgments for a man engaging in Unfaithful Sex ( $M = -2.12$ ,  $SD = 0.87$ ) compared to a woman ( $M = -2.21$ ,  $SD = 0.78$ ),  $t(389) = 4.16$ ,  $p < .001$ , Cohen's  $d = 0.21$ . There was a statistically significant difference in moral judgments for a man engaging in Short-term Sex ( $M = -0.80$ ,  $SD = 0.99$ ) compared to a woman ( $M = -0.95$ ,  $SD = 0.98$ ),  $t(389) = 6.48$ ,  $p < .001$ , Cohen's  $d = 0.33$ . Men were judged slightly more negatively for Homosexual Sex ( $M = -0.39$ ,  $SD = 1.49$ ) compared to a woman ( $M = -0.28$ ,  $SD = 1.44$ ),  $t(389) = -4.73$ ,  $p < .001$ , Cohen's  $d = 0.24$ .

For summary of all sex of actor analyses see Table 11.

	Men $M$ ( $SD$ )	Women $M$ ( $SD$ )	$t$ ( $d$ )
Coercive Sex	-2.76 (0.50)	-2.73 (0.48)	-1.52
Atypical Sex	-2.69 (0.55)	-2.70 (0.54)	2.28* (.12)
Unfaithful Sex	-2.12 (0.87)	-2.21 (0.78)	4.16*** (.21)
Short-term Sex	-0.80 (0.99)	-0.95 (0.98)	6.48*** (.33)
Homosexual Sex	-0.39 (1.49)	-0.28 (1.44)	-4.73*** (.24)
Outgroup Sex	0.40 (0.90)	0.39 (0.91)	1.86
Romantic Sex	1.88 (0.85)	1.89 (0.86)	-1.16

*Note.* Means (and standard deviations) of ratings for male actors and female actors. Sex differences with Cohen's  $d$  in parentheses, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

Table 11: Sex differences for male and female actors

### Sex of participants

We ran Welch independent samples t-tests to investigate the effect of participant sex on moral judgments. Female participants ( $M = -1.05$ ,  $SD = 0.96$ ) judged Short-term Sex slightly more negatively than male participants ( $M = -0.62$ ,  $SD = 0.89$ ),  $t(355.7) = 4.50$ ,  $p < .001$ , Cohen's  $d = 0.60$ . For summary of all sex of participant analyses see Table 12.



	Male Participant <i>M (SD)</i>	Female Participant <i>M (SD)</i>	<i>t (d)</i>
Coercive Sex	-2.68 (0.47)	-2.79 (0.45)	2.26* (.24)
Atypical Sex	-2.61 (0.63)	-2.76 (0.46)	2.56* (.28)
Unfaithful Sex	-2.03 (0.88)	-2.25 (0.73)	2.63** (.28)
Short-term Sex	-0.62 (0.89)	-1.05 (0.96)	4.50*** (.46)
Homosexual Sex	-0.40 (1.36)	-0.30 (1.50)	-0.69
Outgroup Sex	0.35 (0.87)	0.43 (0.92)	-0.82
Romantic Sex	1.91 (0.81)	1.87 (0.89)	0.45

*Note.* Means (and standard deviations) of ratings for male raters and female participants. Sex differences with Cohen's *d* in parentheses, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ .

Table 12: Sex differences for male and female participants

### Moral Foundations Theory

#### *Coercive Sex*

Concern for Harm ( $\beta = -.37$ ,  $t(382) = -6.56$ ,  $p < .001$ ) and Fairness ( $\beta = -.37$ ,  $t(383) = -6.48$ ,  $p < .001$ ) predicted moral judgments of Coercive Sex. Additionally, Harm (Adj.  $R^2 = .10$ ,  $F(3, 365) = 14.6$ ,  $p < .001$ ) and Fairness (Adj.  $R^2 = .09$ ,  $F(3, 383) = 14.25$ ,  $p < .001$ ) explained a significant proportion of variance. Loyalty ( $\beta = .02$ , *ns*), Authority ( $\beta = -.05$ , *ns*), and Purity ( $\beta = -.06$ , *ns*) did not predict moral judgment so Coercive Sex.

#### *Atypical Sex*

Harm ( $\beta = -0.30$ ,  $t(382) = -5.04$ ,  $p < .001$ ), Loyalty ( $\beta = -.22$ ,  $t(382) = -3.74$ ,  $p < .001$ ), and Authority ( $\beta = -.24$ ,  $t(383) = -4.20$ ,  $p < .001$ ), and Purity ( $\beta = -.29$ ,  $t(382) = -5.74$ ,  $p < .001$ ) predicted moral judgments of Atypical Sex and explained a significant proportion of variance. Harm (Adj.  $R^2 = .08$ ,  $F(3, 383) = 12.38$ ,  $p < .001$ ), Loyalty (Adj.  $R^2 = .05$ ,  $F(3, 382) = 8.46$ ,  $p < .001$ ), Authority (Adj.  $R^2 = .06$ ,  $F(3, 383) = 9.72$ ,  $p < .001$ ), and Purity (Adj.  $R^2 = .10$ ,  $F(3, 382) = 14.95$ ,  $p < .001$ ) explained a significant proportion of variance. Fairness did not predict moral judgments of Atypical Sex ( $\beta = -.12$ , *ns*)

#### *Unfaithful Sex*

Concern for Harm ( $\beta = -.23$ ,  $t(382) = -3.85$ ,  $p < .001$ ), Authority ( $\beta = -.23$ ,  $t(383) = -3.94$ ,  $p < .001$ ), and Purity ( $\beta = -.23$ ,  $t(382) = -4.47$ ,  $p < .001$ ) predicted moral judgments of

.04,  $F(3, 383) = 6.38, p < .001$ ), and Purity (Adj.  $R^2 = .05, F(3, 382) = 7.94, p < .001$ ) also explained a significant proportion of variance. Fairness ( $\beta = -.20, ns$ ) and Loyalty ( $\beta = -.13, ns$ ) did not predict moral judgments of Unfaithful Sex.

#### *Short-term Sex*

As predicted, concern for Loyalty ( $\beta = -.26, t(382) = -4.80, p < .001$ ), Authority ( $\beta = -.37, t(383) = -7.40, p < .001$ ), and Purity ( $\beta = -.47, t(382) = -10.99, p < .001$ ) predicted moral judgments of Short-term Sex. Furthermore, Loyalty (Adj.  $R^2 = .12, F(3, 382) = 18.75, p < .001$ ), Authority (Adj.  $R^2 = .18, F(3, 383) = 30.20, p < .001$ ), and Purity (Adj.  $R^2 = .29, F(3, 382) = -10.99, p < .001$ ) also explained a significant proportion of variance. Harm ( $\beta = -.10, ns$ ) and Fairness ( $\beta = .02, ns$ ) did not predict moral judgments of Short-term Sex.

#### *Homosexual Sex*

Concern for Harm ( $\beta = .26, t(382) = 3.79, p < .001$ ), Fairness ( $\beta = .28, t(383) = 4.05, p < .001$ ), Loyalty ( $\beta = -.32, t(382) = -4.63, p < .001$ ), Authority ( $\beta = -.38, t(383) = -5.92, p < .001$ ), and Purity ( $\beta = -.51, t(382) = -9.08, p < .001$ ) predicted moral judgments of Homosexual Sex. Harm (Adj.  $R^2 = .05, F(3, 382) = 7.79, p < .001$ ), Fairness (Adj.  $R^2 = .05, F(3, 383) = 8.50, p < .001$ ), Loyalty (Adj.  $R^2 = .07, F(3, 382) = 10.20, p < .001$ ), Authority (Adj.  $R^2 = .10, F(3, 383) = 14.83, p < .001$ ), and Purity (Adj.  $R^2 = .19, F(3, 382) = 30.97, p < .001$ ) also explained a significant proportion of variance.

#### *Outgroup Sex*

There were no statistically significant associations between Outgroup Sex and the Moral Foundations.

#### *Romantic Sex*

Concern for Loyalty ( $\beta = .30, t(382) = 6.12, p < .001$ ), Authority ( $\beta = .27, t(383) = 5.79, p < .001$ ), and Purity ( $\beta = .25, t(382) = 5.69, p < .001$ ) predicted moral judgments of Romantic Sex. Loyalty (Adj.  $R^2 = .09, F(3, 382) = 14.55, p < .001$ ) and Authority (Adj.  $R^2 =$

.09,  $F(3, 383) = 13.21, p < .001$ ), and Purity (Adj.  $R^2 = .08, F(3, 382) = 12.89, p < .001$ ) explained a significant proportion of variance. Harm ( $\beta = .14, ns$ ) and Fairness ( $\beta = .26, t(310) = 4.30, p < .001$ ) were not significantly correlated with judgments of Romantic Sex.

For a summary of all Moral Foundation analyses, see Table 13.

	Harm	Fairness	Loyalty	Authority	Purity
Coercive	<b>-.37***</b>	<b>-.37***</b>	.02	-.05	-.06
Atypical	<b>-.30***</b>	-.12*	<b>-.22***</b>	<b>-.24***</b>	<b>-.29***</b>
Unfaithful	<b>-.23***</b>	-.20**	-.13**	<b>-.23***</b>	<b>-.23***</b>
Short-term	-.10	.02	<b>-.26***</b>	<b>-.37***</b>	<b>-.47***</b>
Homosexual	<b>.26***</b>	<b>.28***</b>	<b>-.32***</b>	<b>-.38***</b>	<b>-.51***</b>
Outgroup	.13*	.16*	.17**	.06	.05
Romantic	.14**	.15**	<b>.30***</b>	<b>.27***</b>	<b>.25***</b>

Note. Standardized  $\beta$  of regression of Moral Foundations on each Pillar, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , bold numbers are those that were statistically significant using our threshold.

Table 13: Regression of Moral Foundations on the Seven Pillars

### Religiosity

Religiosity predicted moral judgments of Short-term Sex ( $\beta = -.32, t(383) = -9.05, p < .001$ ) and Homosexual Sex ( $\beta = -.43, t(383) = -9.91, p < .001$ ). Religiosity also explained a significant proportion of variance for Short-term Sex (Adj.  $R^2 = .23, F(3, 383) = 40.05, p < .001$ ) and Homosexual Sex (Adj.  $R^2 = .21, F(3, 383) = 36.37, p < .001$ ). Religiosity did not predict judgments of Coercive Sex ( $\beta = .02, ns$ ). Religiosity was not significantly associated with Unfaithful Sex ( $\beta = -.10, ns$ ), and Atypical Sex ( $\beta = -.09, ns$ ), Outgroup Sex ( $\beta = -.04, ns$ ) or Romantic Sex ( $\beta = .10, ns$ ).

### Political Orientation

Political orientation predicted moral judgments of Short-term Sex ( $\beta = -.28, t(383) = -7.94, p < .001$ ), Homosexual Sex ( $\beta = -.41, t(383) = -9.44, p < .001$ ). Political Orientation also explained a significant proportion of variance in Short-term Sex (Adj.  $R^2 = .20, F(3, 383) = 33.19, p < .001$ ), Homosexual Sex (Adj.  $R^2 = .20, F(3, 383) = 33.28, p < .001$ ). Political orientation showed no statistically significant relationship with moral judgments of Coercive Sex ( $\beta = .04, ns$ ), Atypical Sex ( $\beta = -.08, ns$ ), Unfaithful Sex ( $\beta = -.09, ns$ ), Outgroup Sex ( $\beta = -.08, ns$ ), and Romantic Sex ( $\beta = .10, ns$ ).

### **Sociosexual Orientation**

SOI predicted moral judgments of Coercive Sex ( $\beta = .22, t(383) = 3.88, p < .001$ ), Atypical Sex ( $\beta = .24, t(383) = 4.14, p < .001$ ), Unfaithful Sex ( $\beta = .44, t(383) = 7.82, p < .001$ ), Short-term Sex ( $\beta = .58, t(383) = 12.29, p < .001$ ), and Homosexual Sex ( $\beta = .33, t(383) = 4.86, p < .001$ ). SOI also explained a significant proportion of variance in Atypical Sex (Adj.  $R^2 = .06, F(3, 383) = 9.56, p < .001$ ), Unfaithful Sex (Adj.  $R^2 = .14, F(3, 383) = 21.71, p < .001$ ), Short-term Sex (Adj.  $R^2 = .33, F(3, 383) = 64.92, p < .001$ ), and Homosexual Sex (Adj.  $R^2 = .07, F(3, 383) = 10.94, p < .001$ ). SOI showed no statistically significant relationship with moral judgments of Outgroup Sex ( $\beta = .06, ns$ ), Romantic Sex ( $\beta = -.05, ns$ ).

### **Life history theory**

Life history strategy predicted moral judgments of Coercive Sex ( $\beta = -.32, t(383) = -4.05, p < .001$ ), Atypical Sex ( $\beta = -.43, t(383) = -5.33, p < .001$ ), Unfaithful Sex ( $\beta = -.41, t(383) = -4.92, p < .001$ ), Short-term Sex ( $\beta = -.28, t(383) = -3.66, p < .001$ ) and Romantic Sex ( $\beta = .39, t(383) = 5.64, p < .001$ ). Life history strategy also explained a significant proportion of variance in Coercive Sex (Adj.  $R^2 = .04, F(3, 383) = 5.72, p < .001$ ), Atypical Sex (Adj.  $R^2 = .09, F(3, 383) = 13.42, p < .001$ ), Unfaithful Sex (Adj.  $R^2 = .06, F(3, 383) = 9.30, p < .001$ ), Short-term (Adj.  $R^2 = .10, F(3, 383) = 15.28, p < .001$ ), and Romantic

Sex (Adj.  $R^2 = .08$ ,  $F(3, 383) = 12.61$ ,  $p < .001$ ). Life history strategy did not predict moral judgments of Homosexual Sex ( $\beta = -.10$ , *ns*) and Outgroup Sex ( $\beta = .26$ , *ns*).

### **Disgust-Sensitivity**

As predicted, disgust-sensitivity predicted moral judgments of Atypical Sex ( $\beta = -.46$ ,  $t(383) = -3.44$ ,  $p < .001$ ), Short-term Sex ( $\beta = -.46$ ,  $t(383) = -6.37$ ,  $p < .001$ ), and Homosexual Sex ( $\beta = -.40$ ,  $t(383) = -4.40$ ,  $p < .001$ ). Disgust-sensitivity also explained a significant proportion of the variance in Atypical Sex (Adj.  $R^2 = .10$ ,  $F(3, 383) = 15.82$ ,  $p < .001$ ), Short-term Sex (Adj.  $R^2 = .16$ ,  $F(3, 383) = 24.96$ ,  $p < .001$ ), and Homosexual Sex (Adj.  $R^2 = .06$ ,  $F(3, 383) = 9.14$ ,  $p < .001$ ). Contrary to prediction, disgust-sensitivity was significantly correlated with moral judgments of Coercive Sex ( $\beta = -.27$ ,  $t(383) = -3.44$ ,  $p < .001$ ) and Unfaithful Sex ( $\beta = -.40$ ,  $t(383) = -5.05$ ,  $p < .001$ ) and explained a significant proportion of the variance in Unfaithful Sex (Adj.  $R^2 = .06$ ,  $F(3, 383) = 9.73$ ,  $p < .001$ ). Disgust-sensitivity also predicted moral judgments of Romantic Sex ( $\beta = .27$ ,  $t(383) = 3.88$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .05$ ,  $F(3, 383) = 7.10$ ,  $p < .001$ ) and did not predict moral judgments of Outgroup Sex ( $\beta = .04$ , *ns*).

For a summary of the individual difference measure analyses, see Table 14

	Religiosity	Political Orientation	SOI	Life History	Disgust Sensitivity
Coercive	.02	.04	<b>.22***</b>	<b>-.32***</b>	<b>-.27***</b>
Atypical	-.09*	-.08*	<b>.24***</b>	<b>-.43***</b>	<b>-.46***</b>
Unfaithful	-.10*	-.09*	<b>.44***</b>	<b>-.41***</b>	<b>-.40***</b>
Short-term	<b>-.32***</b>	<b>-.28***</b>	<b>.58***</b>	<b>-.28***</b>	<b>-.46***</b>
Homosexual	<b>-.42***</b>	<b>-.41***</b>	<b>.33***</b>	-.10	<b>-.40***</b>
Outgroup	-.03	-.08	.06	.26**	.04
Romantic	.10**	.10**	-.05	<b>.39***</b>	<b>.27***</b>

Note. Standardized  $\beta$  of regression of individual difference variables on each Pillar, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , bold numbers are those that were statistically significant using our threshold.

Table 14: Regression of Individual Difference Variables on the Seven Pillars

### Dark Triad

#### *Coercive Sex*

Machiavellianism ( $\beta = .16$ ,  $t(383) = 3.34$ ,  $p < .001$ ) and psychopathy ( $\beta = .26$ ,  $t(383) = 5.53$ ,  $p < .001$ ) predicted moral judgments of Coercive Sex. Psychopathy also explained a significant proportion of variance (Adj.  $R^2 = .07$ ,  $F(3, 383) = 10.46$ ,  $p < .001$ ). Narcissism did not predict moral judgments of Coercive Sex ( $\beta = .10$ , *ns*).

#### *Atypical Sex*

Psychopathy ( $\beta = .33$ ,  $t(383) = 7.01$ ,  $p < .001$ ) predicted moral judgments of Atypical Sex and explained a significant proportion of variance (Adj.  $R^2 = .13$ ,  $F(3, 383) = 20.51$ ,  $p < .001$ ). Narcissism ( $\beta = .04$ , *ns*) and Machiavellianism ( $\beta = .16$ , *ns*) did not predict moral judgments of Atypical Sex ( $\beta = 0.03$ , *ns*).

#### *Unfaithful Sex*

Machiavellianism ( $\beta = .15$ ,  $t(383) = 3.35$ ,  $p < .001$ ) and psychopathy ( $\beta = .25$ ,  $t(383) = 4.94$ ,  $p < .001$ ) predicted moral judgments of Unfaithful Sex. Machiavellianism (Adj.  $R^2 =$

also explained a significant proportion of variance. Narcissism ( $\beta = .06, ns$ ) did not predict moral judgments of Unfaithful Sex.

#### *Short-term Sex*

Machiavellianism ( $\beta = .15, t(383) = 3.35, p < .001$ ) and psychopathy ( $\beta = .18, t(383) = 3.99, p < .001$ ) predicted moral judgments of Short-term Sex. Machiavellianism (Adj.  $R^2 = .09, F(3, 383) = 14.51, p < .001$ ) and psychopathy (Adj.  $R^2 = .10, F(3, 383) = 16.20, p < .001$ ) also explained a significant proportion of variance. Narcissism did not predict moral judgments of Short-term Sex ( $\beta = .01, ns$ ).

#### *Homosexual Sex*

Narcissism ( $\beta = -.10, ns$ ), Machiavellianism ( $\beta = .03, ns$ ) and psychopathy ( $\beta = .03, ns$ ) did not significantly predict moral judgments of Homosexual Sex.

#### *Outgroup Sex*

Narcissism ( $\beta = -.17, t(383) = -3.49, p < .001$ ), Machiavellianism ( $\beta = -.18, t(383) = -3.60, p < .001$ ) and psychopathy ( $\beta = -.18, t(383) = -3.57, p < .001$ ) predicted moral judgments of Outgroup Sex. Machiavellianism (Adj.  $R^2 = .04, F(3, 383) = 5.80, p < .001$ ) and psychopathy (Adj.  $R^2 = .03, F(3, 383) = 5.70, p < .001$ ) also explained a significant proportion of variance.

#### *Romantic Sex*

Psychopathy predicted moral judgments of Romantic Sex ( $\beta = -.20, t(383) = -4.69, p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .06, F(3, 383) = 9.29, p < .001$ ). Narcissism ( $\beta = .01, ns$ ) and Machiavellianism ( $\beta = -.12, ns$ ) showed no statistically significant relationship with moral judgments of Romantic Sex.

### **Honesty-Humility**

Honesty-Humility predicted moral judgments of Unfaithful Sex ( $\beta = -.29, t(383) = -4.26, p < .001$ ) and Short-term Sex ( $\beta = -.28, t(383) = -4.54, p < .001$ ) and explained a

significant proportion of variance in Unfaithful Sex (Adj.  $R^2 = .05$ ,  $F(3, 383) = 7.19$ ,  $p < .001$ ) and Short-term Sex (Adj.  $R^2 = .11$ ,  $F(3, 383) = 17.65$ ,  $p < .001$ ). Honesty-Humility was not significantly associated with moral judgments of Coercive Sex ( $\beta = -.21$ ,  $ns$ ), Atypical Sex ( $\beta = -.19$ ,  $ns$ ), Homosexual Sex ( $\beta = .00$ ,  $ns$ ), Outgroup Sex ( $\beta = .15$ ,  $ns$ ), and Romantic Sex ( $\beta = .07$ ,  $ns$ )

For a summary of the personality measure analyses, see Table 15.

	Narcissism	Machiavellian	Psychopathy	Honest
Coercive	.10*	<b>.16***</b>	<b>.26***</b>	-.21**
Atypical	.04	.16**	<b>.33***</b>	-.19**
Unfaithful	.06	<b>.15***</b>	<b>.25***</b>	<b>-.29***</b>
Short-term	.01	<b>.15***</b>	<b>.18***</b>	<b>-.28***</b>
Homosexual	-.10	.03	.03	.00
Outgroup	<b>-.17***</b>	<b>-.18***</b>	<b>-.18***</b>	.15*
Romantic	.01	-.12**	<b>-.20***</b>	.07

Note. Standardized  $\beta$  of regression of personality on each Pillar, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , bold numbers are those that were statistically significant using our threshold.

Table 15: Regression of Personality on the Seven Pillars

### Use of Erotic Materials

As predicted, use of erotic materials was positively correlated with moral judgments of Short-term Sex ( $\beta = .27$ ,  $t(383) = 7.65$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .19$ ,  $F(3, 383) = 31.54$ ,  $p < .001$ ). Unexpectedly, use of erotic materials was also positively correlated with moralization of Homosexual Sex ( $\beta = .19$ ,  $t(383) = 4.02$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .05$ ,  $F(3, 383) = 8.40$ ,  $p < .001$ ). Using erotic materials was not significantly correlated with any other pillar.

### Masturbation

As predicted, masturbation was positively correlated with moral judgments of Short-term Sex ( $\beta = .25$ ,  $t(382) = 6.98$ ,  $p < .001$ ) and explained a significant proportion of variance



(Adj.  $R^2 = .17$ ,  $F(3, 382) = 27.98$ ,  $p < .001$ ). Masturbation was not significantly correlated with any other pillar.

### **Group Sex**

As predicted, previous group sex was positively correlated with moral judgments of Short-term Sex ( $\beta = .19$ ,  $t(383) = 5.23$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .13$ ,  $F(3, 383) = 19.96$ ,  $p < .001$ ). Unfaithful Sex ( $\beta = .14$ ,  $t(383) = 3.56$ ,  $p < .001$ ) and explained a significant proportion of variance in (Adj.  $R^2 = .03$ ,  $F(3, 383) = 5.03$ ,  $p < .001$ ). Group Sex was not significantly associated with moral judgments of any other pillar.

### **Partner Exchange**

As predicted, partner exchange was positively correlated with moral judgments of Short-term Sex ( $\beta = .14$ ,  $t(383) = 3.69$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .10$ ,  $F(3, 383) = 15.02$ ,  $p < .001$ ). Partner exchange was not significantly associated with moral judgments of any other pillar.

### **Same Sex Experience**

As predicted, previous same sex experiences were positively correlated with moral judgments of Homosexual Sex ( $\beta = .30$ ,  $t(383) = 5.68$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .09$ ,  $F(3, 383) = 13.86$ ,  $p < .001$ ). Unexpectedly, previous same sex experiences were positively correlated with Short-term Sex ( $\beta = .22$ ,  $t(383) = 5.27$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .13$ ,  $F(3, 383) = 20.12$ ,  $p < .001$ ). Same sex experiences were not significantly associated with moral judgments of any other pillar.

### **Cheating and Mate Poaching**

As predicted, past cheating was positively correlated with moral judgments of Unfaithful Sex ( $\beta = .19$ ,  $t(383) = 4.82$ ,  $p < .001$ ) and explained a significant proportion of

variance (Adj.  $R^2 = .06$ ,  $F(3, 383) = 8.58$ ,  $p < .001$ ). Unexpectedly, past cheating was positively correlated with moral judgments of Short-term Sex ( $\beta = .18$ ,  $t(383) = 4.96$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .12$ ,  $F(3, 383) = 18.99$ ,  $p < .001$ ). Past cheating was not significantly associated with moral judgments of any other pillar.

As predicted, past mate poaching was positively correlated with moral judgments of Unfaithful Sex ( $\beta = .20$ ,  $t(383) = 5.21$ ,  $p < .001$ ) and explained a significant proportion of variance (Adj.  $R^2 = .06$ ,  $F(3, 383) = 9.88$ ,  $p < .001$ ). Unexpectedly, mate poaching was positively correlated with moral judgments of Coercive Sex ( $\beta = .13$ ,  $t(383) = 3.72$ ,  $p < .001$ ), Atypical Sex ( $\beta = .15$ ,  $t(383) = 4.00$ ,  $p < .001$ ), Short-term Sex ( $\beta = .20$ ,  $t(383) = 5.61$ ,  $p < .001$ ) and explained a significant proportion of variance in Atypical Sex (Adj.  $R^2 = .06$ ,  $F(3, 383) = 9.42$ ,  $p < .001$ ), and Short-term Sex (Adj.  $R^2 = .14$ ,  $F(3, 383) = 21.45$ ,  $p < .001$ ). Past mate poaching was not significantly associated with moral judgments of any other pillar.

### **Being Cheating On and Being the Victim of Mate Poaching**

Contrary to predictions, being cheated on was not correlated with moral judgments of Unfaithful Sex ( $\beta = .09$ , *ns*). Unexpectedly, past cheating was positively correlated with moral judgments of Atypical Sex ( $\beta = .15$ ,  $t(383) = 3.81$ ,  $p < .001$ ) and Short-term Sex ( $\beta = .14$ ,  $t(383) = 3.52$ ,  $p < .001$ ) and explained a significant proportion of variance on Atypical (Adj.  $R^2 = .06$ ,  $F(3, 383) = 8.92$ ,  $p < .001$ ) and Short-term Sex (Adj.  $R^2 = .10$ ,  $F(3, 383) = 14.58$ ,  $p < .001$ ). Past cheating was not significantly associated with moral judgments of any other pillar.

Contrary to predictions, experience with someone else attempting to mate poach one's partner was not correlated with moral judgments of Unfaithful Sex ( $\beta = .10$ , *ns*). Unexpectedly, being the victim of mate poaching was positively correlated with moral judgments of Short-term Sex ( $\beta = .16$ ,  $t(383) = 4.27$ ,  $p < .001$ ) and explained a significant proportion of variance on Short-term Sex (Adj.  $R^2 = .11$ ,  $F(3, 383) = 16.68$ ,  $p < .001$ ). Being

the victim of mate poaching was not significantly associated with moral judgments of any other pillar.

For a summary of the past sexual history measure analyses, see Table 16.

	Erotic Materials	Masturbate	Group Sex	Same Sex	Cheating	Being Cheated on
Coercive	-.01	-.01	.09*	-.00	.08	.06
Atypical	.12**	.07	.09*	.13**	.12**	<b>.15***</b>
Unfaithful	.07	.09*	<b>.14***</b>	.09	<b>.19***</b>	.09*
Short-term	<b>.27***</b>	<b>.25***</b>	<b>.19***</b>	<b>.22***</b>	<b>.18***</b>	<b>.14***</b>
Homosexual	<b>.19***</b>	.09	.09*	<b>.30***</b>	.09*	.11*
Outgroup	-.10*	-.07	.04	.03	.00	-.01
Romantic	-.04	-.01	.02	-.06	-.02	-.06

Note. Standardized  $\beta$  of regression of past sexual experiences on each Pillar, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , bold numbers are those that were statistically significant using our threshold.

Table 16: Regression of Past Sexual Experiences on the Seven Pillars

## Discussion

### Can we predict individual differences in sexual morality?

The primary goal of this chapter was to determine whether we could predict individual variation in sexual morality using key theories from the individual difference literature. We applied logic from evolutionary theory in addition to current theories from the individual differences literature to generate a series of predictions about individual differences in sexual morality. In Study 1, we found that the majority of our predictions (83%) were supported by the data. This is a particularly interesting finding because of the ongoing debate within moral psychology concerning moral relativism. How can we explain, predict, or understand moral behavior if morality varies so greatly across individuals and

it is also highly *predictable*. The majority of findings in Study 1 were replicated by Study 2 (73%). By replicating the findings of Study 1 using the Sexual Morality Inventory, Study 2 provides even stronger evidence that variation in sexual morality is predictable based on religiosity, political orientation, sociosexuality, life history strategy, personality, disgust sensitivity, past sexual history and concern for the five moral foundations. Additionally, the majority of new predictions put forth in Study 2 (71%) were supported by the data.

### **What are the links between sexual morality and personal sexual strategy?**

Because of individual differences in environment and genetics, people pursue different sexual strategies. Some individuals, for example, pursue a fast life history strategy and expedite their reproduction due to harsh or unpredictable childhood environments (Kaplan & Gangestad, 2005). Other individuals are more likely to employ an exploitative sexual strategy based on heritable personality traits, such as psychopathy and narcissism (Baughman et al., 2014). The evidence suggests that people's abstract moral beliefs about sexual behavior are strongly linked to their personal sexual strategies. For example, people who are pursuing a long-term mating strategy negatively moralize Short-term Sex, possibly because promiscuous sexual behavior interferes with their preferred sexual strategy. It is important to note that we asked participants to provide their moral judgments of third party behavior, not their own behavior. It seems that moral judgments about other people's sexuality are closely tied to one's own inclusive fitness. This provides support for the Fundamental Meta-theoretical Principle developed in Chapter 1, which posits that people will negatively moralize behaviors that decrease their inclusive fitness and will positively moralize behaviors that increase their inclusive fitness. Future research on morality would benefit from the inclusion of an evolutionary psychological approach to predict which behaviors will be moralized and by whom.

These findings also have important real world implications. We know that people's personal moral beliefs influence their behaviors. Study 2 shows that people's past sexual behaviors are associated with their moral judgments of those behaviors. For example, people who have cheated on a romantic partner in the past view Unfaithful Sex as less morally wrong. Therefore, if we can understand and predict people's sexual moral beliefs, we may be able to predict their future likelihood of engaging in a variety of sexual behaviors. This could be extremely helpful in identifying those individuals who are more likely to engage in exploitative or opportunistic sexual behaviors, such as sexual coercion and infidelity. Additionally, if we understand the biological and environmental predictors of a coercive sexual morality, we can better deter predatory sexual behavior. This is a topic of particular interest and relevance to universities because men and women aged 18-24 report high levels of sexual assault compared to other age groups (National Crime Victimization Survey, 2014).

What is unknown is the casual direction of the relationship between sexual behavior and sexual moral attitudes. Do people change their future moral judgments to be in line with previous sexual behavior, so that people avoid accusations of moral hypocrisy (Kurzban, 2010; Rothschild & Keeper, 2017)? Do people's personal sexual moral beliefs restrict their future sexual behaviors (Mazar et al., 2008)? It is often the case that the casual arrow points in both directions, creating a feedback loop where behavior and attitudes reinforce one another. Or the relationship could be entirely mediated by third variables that calibrate both sexual behavior and sexual moral judgments.

A fruitful future direction of this research could be to determine if and to what extent people's moral judgments of Coercive Sex can predict willingness to engage in a variety of sexually coercive behaviors.

### **The role of disgust and other emotions in moral judgments and behavior**

Disgust-sensitivity predicted moralization across 6 of the Seven Pillars of Sexual Morality, with the exception of Outgroup Sex. The magnitude of the effect of disgust-sensitivity on sexual morality across a wide range of sexual behaviors was quite large by common social science standards. For example, disgust-sensitivity predicted not just judgments of potential high-risk disease vectors such as Homosexual Sex ( $\beta = -.40$ ) and Atypical Sex ( $\beta = -.46$ ), but also judgments of Coercive Sex ( $\beta = -.27$ ) and Romantic Sex ( $\beta = -.27$ ). Future research should investigate the role of moral emotions, particularly disgust and sexual arousal, on sexual morality. Unlike other areas of morality, disgust may play a particularly prominent role in the moralization of the sexual realm because disgust originally evolved to solve problems of pathogen avoidance and was only later co-opted by the moral psychological system. The threat of pathogenic infection is an additional adaptive problem unique to the sexual domain, unlike other domains of morality (e.g., property theft or physical violence), so people's sexual morality may be particularly sensitive to individual differences in disgust. Furthermore, because disgust is easily evoked, people's sexual morality may be much more responsive to subtle environmental factors than other areas of morality.

### *Summary*

The primary goal of this study was to investigate whether key individual difference variables can be used to predict differences in people's sexual morality. Using evolutionary theory and other key psychological theories of individual differences, we created several predictions about how sexual morality varies across individuals. In Study 1, 312 participants (127 men, 185 women) completed an online survey that measured their sexual moral judgments and various other short individual difference questionnaires. We found that the majority of our predictions (85%) were supported. Study 2 replicated the findings of Study 1 using the Sexual Morality Inventory developed in Chapter 4. Furthermore, we found that Moral Foundations Theory predicted moralization of the Seven Pillars of Sexual Morality.

Religiosity predicted moralization of all Pillars except Outgroup Sex and Romantic Sex. Political orientation predicted moralization of all Pillars except Coercive Sex and Romantic Sex. SOI predicted moralization of all Pillars except Outgroup Sex and Romantic Sex. Life history theory predicted moralization of all Pillars except Outgroup Sex. Among personality variables, Dark-Triad traits and Honesty-Humility predicted moralization of the Seven Pillars.

## **Chapter 6: Cross-Cultural Variation in Sexual Morality**

Since morality is highly cross-culturally variable (Henrich, 2016; Henrich et al., 2010), relying upon W.E.I.R.D. cultures would be a grave oversight. In order to capture both universality and diversity of sexual morality, we collected data using an earlier, 26-item form of the Sexual Morality Inventory in university samples in 37 countries, across 6 continents. The current research study is the largest comprehensive cross-cultural study of sexual morality.

We were interested in the cultural moral norms that exist pertaining to the sexual domain. We expect some sexual norms to vary greatly from culture to culture and other sexual norms to show relative consistency across cultures. Instead of an infinitely variable sample space of possible cultural sexual morality (e.g., moral relativism), we may be able to predict variation in sexual morality across cultures based on evolutionary principles. For example, over deep evolutionary time certain behaviors, such as sexual coercion, inflicted heavy fitness costs on oneself and one's mate, kin, and allies. Negative emotional reactions to and condemnation of sexual coercion could act as an evolved psychological defense against sexual violence. Thus, we expect harsh negative moralization of rape to be a universal feature of sexual morality across cultures. Thus, one goal of the current study was to identify which of the Seven Pillars of Sexual Morality show universality in moral judgments across cultures.

We expect the moralization of other sexual behaviors to vary greatly across cultures (e.g., Homosexual Sex). However, by applying the logic of evolutionary psychological theories to sexual normativity, we may be able to find systematic patterns in cross-cultural moralization of those behaviors that show the greatest variability. Therefore, the second key goal of this massive cross-cultural study of sexual morality was to identify potential predictors of cross-cultural variation in sexual moral norms. Below, we give the rationale and predictions made by key evolutionary psychological theories.



Evolutionary psychology is not a monolith, and there exist competing evolutionary psychological theories that seek to explain cultural variation in sexual attitudes and behavior. Two prominent theories of individual and cultural differences in sexuality are the strategic pluralism theory and life history theory. These two theories make divergent predictions about the effect of environmental harshness on sexual attitudes toward short-term mating. Therefore, the third goal of this study was to generate predictions based on these mid-level evolutionary psychological theories and determine which, if any, of the two theories the data support.

### **Incest**

Based on the heavy fitness costs associated with sex with close genetic relatives ( $r \sim .5$  or  $.25$ ) and the evidence for evolved incest-avoidance mechanisms (Lieberman et al. 2003; 2011; 2012) that come online early, we expect there to be universal negative moralization of incest with close genetic relatives.

*Atypical Sex:* We predict relative universality in negative cultural moralization of incest with close relatives (e.g. sex with parent or sibling) across religion and geographic region.

### **Coercive Sex**

Based on the heavy costs inflicted upon victims within one's social group and the likelihood of those individuals who pursue an exploitative mating strategy to also employ other exploitative behaviors, we expect moralization of rape to be relatively stable across cultures.

*Coercive Sex:* We predict relative universality in cultural moralization of rape across religion and geographic region.

### **Religiosity**

Religion has been hypothesized to be a cultural institution that reinforces and promotes a long-term mating strategy in its constituents. The reproductive religiosity model proposed by Weeden, Cohen, and Kenrick (2008) proposes that the key difference between religious and non-religious individuals is reproductive strategy. Specifically, they found that religiosity correlates with restricted sociosexuality, fewer sex partners, more children, and moral beliefs that promote a long-term mating strategy. Their model is based on the fact that individual mating strategies can be facilitated or impeded by other people's reproductive strategies (Buss, 2002; Buss & Schmitt, 1993), and more specifically that promiscuous sexuality threatens the sexual interest of those pursuing a long-term mating strategy because of risk of infidelity, defection from the relationship, and diversion of reproductively valuable resources away from the mateship and toward pursuing short-term sexual opportunities. Building upon this work, Weeden and Kurzban (2013) found that across cultures, various indices of religiosity were predicted by sexual moral norms. In line with the reproductive religiosity model, we hypothesize that behaviors that are associated with a short-term mating strategy (e.g. Short-term Sex, Unfaithful Sex, and Homosexual Sex) will be viewed more morally wrong by more religious countries. We do not expect that religiosity is correlated with judgments about incest and rape.

*Short-term Sex:* As religiosity increases, Short-term Sex (e.g. one-time sexual encounter, reputation as easily-accessible, sex without love, paying for sex, sex for money) will be judged more morally wrong.

*Homosexual Sex:* As religiosity increases, Homosexual Sex (e.g. kiss, have sex with, or marry same sex) will be judged more morally wrong.

*Unfaithful Sex:* As religiosity increases, Unfaithful Sex (e.g. mate poaching, sexual affair) will be judged more morally wrong.

*Atypical:* Religiosity will not be associated with moralization of incest.

*Coercive*: Religiosity will not be associated with moralization of rape.

*Divorced*: As religiosity increases, “getting divorced” will be judged more morally wrong.

### **Communicable Diseases**

Exposure to dangerous pathogens was a recurrent adaptive problem that humans faced throughout our evolutionary history. There is a growing body of evidence to suggest that humans evolved a behavioral immune system consisting of a suite of psychological adaptations designed to detect and avoid contact with potential infectious pathogens (Schaller, 2016; Schaller & Park, 2011). Negative moralization of sexual acts that are high-risk disease vectors (e.g., Short-term Sex, Homosexual Sex, Unfaithful Sex, Outgroup Sex) could be part of our behavioral immune system as a defense against sexually transmitted and other communicable diseases. We further propose that cultural variation in moralization of these types of sexual behaviors should be sensitive to the likely risk of pathogen infection. Specifically, we predict that individuals in countries in which sexually transmitted disease is common (e.g. statistics on HIV) will judge sexual acts that pose a high risk of spreading STDs more morally wrong. We also expect that greater parasite prevalence more generally will be associated with harsher moralization of Short-term Sex, Homosexual Sex, Unfaithful Sex, and Outgroup Sex. Warmer temperatures are associated with greater parasite prevalence. We expect to find no association between likelihood of pathogen infection and cross-cultural moral judgments of rape.

#### *HIV prevalence*

*Short-term Sex*: Countries with higher HIV stats will judge Short-term Sex (e.g. one-time sexual encounter, reputation as easily-accessible, sex without love, paying for sex, sex for money) more morally wrong.

*Homosexual Sex:* Countries with higher HIV stats will judge Homosexual Sex (e.g. kiss, have sex with, or marry same sex) more morally wrong.

*Unfaithful Sex:* Countries with higher HIV stats will judge Unfaithful Sex (e.g. mate poaching, sexual affair) more morally wrong.

*Outgroup Sex:* Countries with higher HIV stats will judge Outgroup Sex (e.g. sex with someone from a rival group) more morally wrong.

#### *Average Temperature*

*Short-term Sex:* Countries with higher average temperatures will judge Short-term Sex (e.g. one-time sexual encounter, reputation as easily-accessible, sex without love, paying for sex, sex for money) more morally wrong.

*Homosexual Sex:* Countries with higher average temperatures will judge Homosexual Sex (e.g. kiss, have sex with, or marry same sex) more morally wrong.

*Unfaithful Sex:* Countries with higher average temperatures will judge Unfaithful Sex (e.g. mate poaching, sexual affair) more morally wrong.

*Outgroup Sex:* Countries with higher average temperatures will judge Outgroup Sex (e.g. sex with someone from a rival group) more morally wrong.

#### **Activation of Outgroup Psychology**

Human coalitional psychology emerges early, is a powerful motivator of moral behavior, and exists across all cultures (Bloom, 2013; Kurzban, Tooby, & Cosmides, 2001). Competing with rival groups over reproductively relevant resources, such as food, territory, and access to mates, was a recurrent problem faced by our ancestors. Over time, humans evolved ingroup favoritism and outgroup prejudice as mechanisms to guide their behavior in times of intergroup conflict. Although humans have the capacity for negative moralization of outgroups, only in certain circumstances would we expect people's moral outgroup psychology to become activated. Recent history of external or internal strife and warfare are

likely powerful psychological inputs that activate moral outgroup psychology. The Global Peace Index is a measure of how much conflict, including active warfare and political and civil unrest, exists in a given country. The Global Peace Index can be further broken down into internal conflicts (scale 1-5, 5 being the highest level of conflict) and conflict with neighboring countries (scale 1-5, 5 being the highest level of conflict). We hypothesize that internal conflict within a country, such as civil warfare and political unrest, will activate people's outgroup psychology and lead to more negative moralization of outgroup sexual relationships. Similarly, we expect that external conflict with neighboring countries, such as active warfare or political tensions, would also activate people's outgroup psychology, leading to harsher negative moralization of sex with rival group members.

#### *Global Peace Index*

Countries that have higher levels of conflict will moralize sex with rival group members more.

#### *Internal conflict*

Countries that have greater internal conflict will moralize sex with rival group members more.

#### *Conflict with Neighboring Countries*

Countries that have greater conflict with neighboring countries will moralize sex with rival group members more.

### **Strategic Pluralism Theory**

There are two prominent theories on the impact of harshness of local environment on sexual strategies that make opposing predictions: strategic pluralism theory and life history theory. Individuals pursue different mating strategies based on individual differences in genetics and environments (Buss & Schmitt, 1993). Building upon these ideas, Gangestad and Simpson (2000) proposed the strategic pluralism theory to explain within and between

sex variations in mating strategy. They argue that in environments where resources are scarce or unpredictable, biparental care is necessary to ensure that offspring survive to reproductive age. According to strategic pluralism theory, men and (especially) women should facultatively shift their sociosexual orientation to be more restricted (i.e., long-term oriented) in harsh environments where biparental care is essential to offspring survival. In support of this potential link between environmental harshness and sexuality, research by Schmitt (2005) found that women and men (to a lesser extent) in countries with harsher environments (as indexed by infant mortality rates, low birth weight, and prevalence of child malnutrition) had lower SOI. If strategic pluralism theory is correct, we should find that cultures with greater infant mortality, percentage of low birth weight infants, and percentage of people in poverty should more negatively moralize short-term sexual orientation because both short-term sex and unfaithful sex strategically interfere with pursuit of long-term relationship goals. Following this logic, people in countries that have *less* environmental harshness will have less need for biparental care and less need for strict enforcement of long-term mating. According to strategic pluralism theory, in more abundant environments, both men and women are able to employ short-term mating strategies because biparental care is no longer a critical component of reproductive success. Following logic of SPT, we would expect that countries with greater gross domestic product and longer life expectancy would more positively moralize short-term mating.

### **Life History Theory**

Contrary to strategic pluralism theory, life history theory posits that harsh and unpredictable environments experienced during a sensitive period in childhood and adolescence influence individuals to adopt a fast life history strategy (Kaplan & Gangestad, 2005). A fast life history strategy is characterized by expedited reproduction (e.g., early sexual maturation), greater number of offspring, and low parental investment per offspring.

According to life history theory, in harsh and unpredictable environments, individuals are more likely to adopt a fast life history strategy (Belsky, Steinberg, & Draper, 1991; Brumbach, Figueredo, & Ellis, 2009; Chisholm, 1999). If life history theory is correct, we would expect cultures with greater infant mortality, percentage of low birth weight infants, and percentage of people in poverty should more positively moralize short-term sexual orientation. Following this rationale, life history theory would predict that as GDP per capita and life expectancy increase, individuals will employ a slow life history, characterized by long-term mating, and would be more likely to negatively moralize short-term mating.

Table 17 outlines predictions derived from both strategic pluralism theory and life history theory on the effect of environmental harshness on moralization of behaviors that promote a short-term mating strategy. The goal is to pit predictions from strategic pluralism theory against predictions from life history theory and see which, if either, evolutionary theory can better predict cross-cultural variation in sexual morality.

<b>Index of environmental harshness</b>	<b>Strategic pluralism theory predictions</b>	<b>Life history theory predictions</b>
Infant mortality	+ correlation with Short-term, Homosexual, and Unfaithful	- correlation with Short-term, Homosexual, and Unfaithful
Low birth weight	+ correlation with Short-term, Homosexual, and Unfaithful	- correlation with Short-term, Homosexual, and Unfaithful
Percentage in poverty	+ correlation with Short-term, Homosexual, and Unfaithful	- correlation with Short-term, Homosexual, and Unfaithful
GDP	- correlation with Short-term, Homosexual, and Unfaithful	+ correlation with Short-term, Homosexual, and Unfaithful
Life expectancy	- correlation with Short-term, Homosexual, and Unfaithful	+ correlation with Short-term, Homosexual, and Unfaithful

Table 17: Comparison of Predictions Made by Strategic pluralism theory and Life history theory

**Method**

6,101 participants were primarily students at a local university in the field site location. Location, sample size, mean participant age, and majority religion of each of the 37 collaborator sites are given in Table 18.

### *Procedure*

Student populations were offered course credit in exchange for their participation in the 30-minute questionnaire. The non-student populations were compensated \$5 in exchange for their participation. After signing the informed consent, participants were given the Cross Cultural Daily Life Questionnaire that included a creative drawing task, a demographics questionnaire, a relationships questionnaire, the sexual morality questionnaire, a survey on interpersonal behaviors, a brief questionnaire about their current long-term mate, a Facebook usage survey, an immunology scale, and their opinions on a variety of moral issues (e.g., death penalty, gay rights). Participants were free to skip any questions or surveys that they did not wish to answer. Once they were finished, all participants were thanked for their participation and debriefed. At the end of the experimental session, a research assistant would either assign participants course credit or give them \$5 in an envelope, depending on whether the participants were part of a student or general population sample.

### *Materials*

**Demographics Questionnaire:** A brief demographics questionnaire was included on the cross-cultural survey, including question on participants' sex, age, relationship status, education level, economic situation, religious affiliation, and religiosity.

**Brief Sexual Morality Questionnaire:** A 26-item, abbreviated version of the Sexual Morality Inventory (Appendix A) was used to limit participation fatigue since our survey was added to a larger collection of surveys administered to all participants. Importantly, the questionnaire asked participants to report the cultural moral judgments for a variety of sexual



behaviors. Instructions highlighted that we were interested in cultural moral norms by stating that “some behaviors will be viewed as morally good in the eyes of people in your culture; others will be likely viewed as morally bad in the eyes people in your culture.” For the complete Daily Life Questionnaire, including surveys and questions not used in this research, see Appendix D.

**UN Human Development Reports (2009-2015):** We used data from the United Nations Human Development Reports from 2009 to 2015 to calculate infant mortality rates per 1,000 births, Gross Domestic Product per person, average life expectancy, and the Gender Inequality Index. For each measure, we averaged across reports from 2009-2015 for each country for which data was available (United Nations Development Programme (UNDP), 2016)

**UNICEF:** We used data from UNICEF to calculate percentage of low birth weight infants, defined as the proportion of newborns weighing less than 2,500 grams. According to UNICEF, infant weight is a good indicator of newborn and mother health (UNICEF and WHO, 2004).

**CIA Factbook:** We used data from the CIA Factbook to calculate percentage in poverty and adult HIV prevalence statistics from 2013-2014.

**Climactic Research Unit:** We used data from the Climactic Research Unit to calculate average temperature in Celsius per country.

**Global Peace Index:** The Institute for Economics and Peace’s Global Peace Index for 2016 was used to measure the level of internal and external conflict for each country.

<b>Country</b>	<b>N (Men, Women)</b>	<b>Age <i>M(SD)</i></b>	<b>Religion(s)</b>
Algeria	N = 283 (126, 157)	27.73 (7.61)	Islam
Australia	N = 244 (115, 129)	29.47 (10.57)	Non-religious
Austria	N = 89 (19, 70)	25.39 (6.74)	Catholicism
Belgium	N = 193 (93, 100)	29.56 (9.81)	Christianity
Brazil	N = 132 (65, 66)	28.92 (10.08)	Christianity
Chile	N = 101 (48, 53)	35.22 (14.80)	Catholicism
China	N = 96 (46, 50)	29.51 (7.90)	Buddhism
Colombia	N = 85 (41, 44)	28.04 (11.92)	Catholicism
Costa Rica	N = 74 (37, 37)	39.05 (8.21)	Christianity
Croatia	N = 200 (98, 102)	29.32 (13.59)	Catholicism
Cuba	N = 141 (65, 74)	30.76 (13.40)	Christianity
El Salvador	N = 45 (15, 27)	24.21 (7.85)	Christianity
Estonia	N = 74 (35, 39)	26.95 (8.30)	Non-religious
Georgia	N = 98 (51, 47)	27.37 (10.28)	Christianity
Greece	N = 84 (36, 47)	27.37 (10.28)	Christianity
Hungary	N = 421 (208, 213)	29.63 (10.74)	Catholicism
India	N = 193 (97, 96)	29.63 (10.74)	Hinduism
Italy	N = 204 (70, 134)	31.44 (12.62)	Catholicism
Lithuania	N = 150 (74, 76)	28.80 (11.24)	Catholicism
Malaysia	N = 54 (24, 30)	21.06 (1.22)	Islam
Nigeria	N = 141 (85, 55)	25.49 (6.54)	Christianity
Norway	N = 154 (86, 68)	23.23 (3.00)	Non-religious
Pakistan	N = 331 (137, 194)	26.81 (8.30)	Islam
Peru	N = 118 (41, 75)	21.97 (6.35)	Catholicism
Poland	N = 161 (39, 122)	26.41 (9.11)	Catholicism
Portugal	N = 136 (50, 83)	27.57 (9.57)	Catholicism
Romania	N = 106 (50, 56)	30.28 (11.91)	Christianity
Russia	N = 173 (78, 95)	25.45 (8.83)	Christianity
Slovakia	N = 207 (50, 156)	24.67 (9.15)	Christianity
Slovenia	N = 314 (149, 165)	30.48 (11.44)	Catholicism
South Korea	N = 123 (63, 60)	30.50 (12.08)	Christianity
Spain	N = 107 (35, 72)	23.88 (5.35)	Catholic
Sweden	N = 160 (80, 80)	30.26 (12.01)	Non-religious
Turkey	N = 507 (240, 267)	29.10 (10.80)	Islam
Uganda	N = 132 (76, 56)	26.48 (8.16)	Christianity
Uruguay	N = 129 (53, 76)	29.78 (10.93)	Christianity
USA	N = 141 (58, 79)	19.96 (2.42)	Christianity

Table 18: Country, Sample Size, Participant Age, and Majority Religion

## Results

For each of the predictor variables, we calculated the average standardized moral judgment score for each country to investigate the effect of each of our predictor variables on

one-way ANOVAs and report standardized betas that can be interpreted as effect sizes. Not all countries had data available to test all predictions, so the sample size varies across analyses. We note whenever countries were removed from analyses due to lack of data.

### Region

	Africa	Australia	USA	S America	E Asia	S Asia	E Europe	W Europe
Coercive	-2.59 (0.18)	-2.83	-2.83	-2.71 (0.10)	-2.83 (0.07)	-2.66 (0.19)	-2.83 (0.11)	-2.83 (0.08)
Atypical	-2.53 (0.23)	-2.39	-2.59	-2.35 (0.25)	-2.60 (0.23)	-2.48 (0.05)	-2.79 (0.08)	-2.56 (0.18)
Unfaithful	-2.13 (0.53)	-2.28	-2.51	-1.73 (0.24)	-2.14 (0.56)	-2.28 (0.11)	-2.00 (0.13)	-2.01 (0.20)
Short-term	-1.84 (0.56)	-0.92	-1.46	-1.01 (0.24)	-1.98 (0.32)	-1.89 (0.36)	-1.32 (0.25)	-1.10 (0.32)
Homosexual	-2.57 (0.21)	-0.39	-0.51	-1.11 (0.32)	-1.71 (0.91)	-1.82 (0.61)	-1.38 (0.60)	-0.68 (0.77)
Outgroup	-1.67 (0.92)	-0.47	-0.52	-0.95 (0.13)	-1.34 (0.40)	-1.67 (0.54)	-0.74 (0.41)	-0.51 (0.31)
Romantic	1.11 (0.29)	1.24	1.63	1.43 (0.48)	0.76 (0.55)	1.19 (0.02)	1.77 (0.31)	1.76 (0.42)

*Note.* Regions with only one country do not have standard deviations across countries

Table 19: Mean and (SD) of Moral Judgments across Geographic Region

We grouped countries based on geographic region. Descriptive statistics are given in Table 19. Separate, one-way between subjects ANOVAs were conducted to compare the effect of region on cultural moralization of the seven pillars of sexual morality.

There was a significant effect of region on cultural moralization of Short-term Sex ( $F(7, 29)= 7.76, p < .001$ ), Homosexual Sex ( $F(7, 29)= 3.62, p < .01$ ), Unfaithful Sex ( $F(7, 29)= 3.05, p < .05$ ), Outgroup Sex ( $F(7, 29)= 5.21, p < .001$ ), and Romantic Sex ( $F(7, 29)= 3.04, p < .05$ ). Contrary to our predictions, there was a significant effect of region on cultural moralization of Coercive Sex ( $F(7, 29)= 3.80, p < .01$ ) and Atypical Sex ( $F(7, 29)= 3.73, p <$

## Majority Religion

	Catholicism	Christianity	Hinduism	Islam	Unaffiliated
Coercive	-2.78 (0.11)	-2.81 (0.13)	-2.80	-2.79 (0.01)	-2.87 (0.06)
Atypical	-2.52 (0.27)	-2.64 (0.14)	-2.51	-2.65 (0.10)	-2.70 (0.27)
Unfaithful	-1.87 (0.24)	-2.04 (0.16)	-2.21	-2.41 (0.34)	-2.05 (0.50)
Short-term	-1.08 (0.25)	-1.22 (0.40)	-1.63	-2.09 (0.47)	-1.59 (0.43)
Homosexual	-0.96 (0.46)	-1.14 (1.22)	-1.39	-2.22 (0.72)	-1.18 (0.74)
Outgroup	-0.70 (0.29)	-0.66 (0.55)	-1.29	-1.78 (0.85)	-1.14 (0.44)
Romantic	1.69 (0.42)	1.74 (0.45)	1.18	1.00 (0.51)	1.02 (0.47)

*Note.* There was only one country whose participants identified as predominantly Hindu

Table 20: Mean and (SD) of Moral Judgments across Major Religions

We grouped countries based on which religion, if any, was practiced by a majority of the participants. Descriptive statistics are given in Table 20. Separate, one-way between subjects ANOVAs were conducted to compare the effect of majority religion on cultural moralization of the seven pillars of sexual morality.

There was a significant effect of majority religion on cultural moralization of Short-term Sex ( $F(7, 29) = 4.48, p < .01$ ), Unfaithful Sex ( $F(7, 29) = 2.39, p < .05$ ), Outgroup Sex ( $F(7, 29) = 4.28, p < .01$ ), and Romantic Sex ( $F(7, 29) = 2.54, p < .05$ ). As expected, there was no effect of majority religion on cultural moralization of Atypical Sex ( $F(7, 29) = 1.35, ns$ ), Coercive Sex ( $F(7, 29) = 1.74, ns$ ). Unexpectedly, there was also no effect of majority religion on cultural moralization of Homosexual Sex ( $F(7, 29) = 1.83, ns$ ).

## Religiosity

Two countries did not provide data on religiosity. As predicted, religiosity was negatively associated with cross-cultural moral judgments of Short-term Sex ( $\beta = -0.59, t(33) = -5.33, p < .001$ ), Homosexual Sex ( $\beta = -0.78, t(33) = -7.28, p < .001$ ), and divorce ( $\beta = -.69, t(33) = -5.43, p < .001$ ). Religiosity also explained a significant proportion of variance in

cross-cultural moral judgments of Short-term Sex (Adj.  $R^2 = .45$ ,  $F(1, 33) = 28.39$ ,  $p < .001$ ), Homosexual Sex (Adj.  $R^2 = .60$ ,  $F(1, 33) = 53.03$ ,  $p < .001$ ), and divorce (Adj.  $R^2 = .46$ ,  $F(1, 33) = 29.46$ ,  $p < .001$ ). As predicted, religiosity was not associated with cross-cultural moralization of Atypical Sex ( $\beta = 0.14$ , *ns*). Contrary to predictions, religiosity did not predict cross-cultural moral judgments of Unfaithful Sex ( $\beta = -0.08$ , *ns*). Unexpectedly, religiosity was associated with cross-cultural moral judgments of Outgroup Sex ( $\beta = -0.65$ ,  $t(33) = -4.93$ ,  $p < .001$ ), Coercive Sex ( $\beta = 0.56$ ,  $t(33) = 3.81$ ,  $p < .001$ ), and Romantic Sex ( $\beta = -0.26$ ,  $t(33) = -2.24$ ,  $p < .05$ ). Religiosity also explained a significant proportion of variance in cross-cultural moral judgments of Outgroup Sex (Adj.  $R^2 = .41$ ,  $F(1, 33) = 24.32$ ,  $p < .001$ ), Coercive Sex (Adj.  $R^2 = .28$ ,  $F(1, 33) = 14.51$ ,  $p < .001$ ), and Romantic Sex (Adj.  $R^2 = .11$ ,  $F(1, 33) = 5.02$ ,  $p < .05$ ). Further analyses revealed that religiosity is not significantly associated with moralization of Romantic Sex for either male actors ( $\beta = -0.14$ , *ns*) or female actors ( $\beta = -0.13$ , *ns*).

### **HIV Prevalence**

11 countries did not have data on HIV prevalence. Contrary to predictions, HIV prevalence was not correlated with Short-term Sex ( $\beta = -0.10$ , *ns*), Homosexual Sex ( $\beta = -0.36$ , *ns*), Unfaithful Sex ( $\beta = 0.13$ , *ns*), and Outgroup Sex ( $\beta = -0.05$ , *ns*). Unexpectedly, HIV prevalence was positively associated with Atypical Sex ( $\beta = 0.41$ ,  $t(24) = 2.60$ ,  $p < .05$ ) and Coercive Sex ( $\beta = 0.65$ ,  $t(24) = 3.63$ ,  $p < .01$ ). HIV prevalence also explained a significant proportion of variance in cross-cultural moral judgments of Atypical Sex (Adj.  $R^2 = .19$ ,  $F(1, 24) = 6.77$ ,  $p < .01$ ) and Coercive Sex (Adj.  $R^2 = .33$ ,  $F(1, 24) = 13.21$ ,  $p < .01$ ). HIV was not significantly associated with Romantic Sex ( $\beta = -0.20$ , *ns*). Further analyses revealed that HIV prevalence was not significantly correlated with Atypical Sex for male actors ( $\beta = 0.06$ , *ns*) or female actors ( $\beta = 0.03$ , *ns*).

## Temperature

As predicted, temperature was negatively correlated with cross-cultural moralization of Homosexual Sex ( $\beta = -0.38$ ,  $t(35) = -2.43$ ,  $p < .05$ ) and Outgroup Sex ( $\beta = -0.47$ ,  $t(35) = -3.14$ ,  $p < .01$ ) and explained a significant proportion of variance in Homosexual Sex (Adj.  $R^2 = .12$ ,  $F(1, 35) = 5.89$ ,  $p < .05$ ) and Outgroup Sex (Adj.  $R^2 = .20$ ,  $F(1, 35) = 9.85$ ,  $p < .01$ ). Contrary to predictions, average temperature was not correlated with Short-term Sex ( $\beta = -0.07$ ,  $ns$ ) or Unfaithful Sex ( $\beta = 0.13$ ,  $ns$ ). Unexpectedly, average temperature was correlated with cross-cultural moralization of Atypical Sex ( $\beta = 0.37$ ,  $t(35) = 2.99$ ,  $p < .01$ ), Coercive Sex ( $\beta = 0.50$ ,  $t(35) = 3.42$ ,  $p < .01$ ), and Romantic Sex ( $\beta = -0.34$ ,  $t(35) = -2.80$ ,  $p < .01$ ). Average temperature also explained a significant proportion of variance in Atypical Sex (Adj.  $R^2 = .18$ ,  $F(1, 35) = 8.93$ ,  $p < .01$ ), Coercive Sex (Adj.  $R^2 = .23$ ,  $F(1, 35) = 11.68$ ,  $p < .01$ ), and Romantic Sex (Adj.  $R^2 = .16$ ,  $F(1, 35) = 7.84$ ,  $p < .01$ )

## Global Peace Index

As predicted, the global level of conflict was negatively correlated with cross-cultural moralization of Outgroup Sex ( $\beta = -0.46$ ,  $t(35) = -3.05$ ,  $p < .01$ ) and explained a significant proportion of the variance in Outgroup Sex (Adj.  $R^2 = .19$ ,  $F(1, 35) = 9.30$ ,  $p < .01$ ). Conflict was also significantly correlated with Short-term Sex ( $\beta = -0.29$ ,  $t(35) = -2.07$ ,  $p < .05$ ), Homosexual Sex ( $\beta = -0.47$ ,  $t(35) = -3.16$ ,  $p < .01$ ), and Coercive Sex ( $\beta = 0.53$ ,  $t(35) = 3.72$ ,  $p < .001$ ). Global conflict also explained a significant proportion of Short-term Sex (Adj.  $R^2 = .08$ ,  $F(1, 35) = 4.29$ ,  $p < .05$ ), Homosexual Sex (Adj.  $R^2 = .20$ ,  $F(1, 35) = 10.01$ ,  $p < .01$ ), and Coercive Sex (Adj.  $R^2 = .26$ ,  $F(1, 35) = 13.83$ ,  $p < .001$ ). Global conflict was not significantly associated with moralization of Unfaithful Sex ( $\beta = 0.09$ ,  $ns$ ), Atypical Sex ( $\beta = 0.02$ ,  $ns$ ), or Romantic Sex ( $\beta = -0.02$ ,  $ns$ ). Sex differentiated analyses revealed that global conflict was

not correlated with moralization of Short-term Sex for male actors ( $\beta = -0.17$ , *ns*), but was significantly correlated for female actors ( $\beta = -0.16$ ,  $t(35) = -2.51$ ,  $p < .05$ ).

### **Internal Conflict**

As predicted, internal conflict was negatively correlated with cross-cultural moralization of Outgroup Sex ( $\beta = -0.42$ ,  $t(35) = -2.78$ ,  $p < .01$ ) and explained a significant proportion of the variance in Outgroup Sex (Adj.  $R^2 = .16$ ,  $F(1, 35) = 7.71$ ,  $p < .01$ ). Internal conflict was also significantly correlated with Short-term Sex ( $\beta = -0.30$ ,  $t(35) = -2.18$ ,  $p < .05$ ), Homosexual Sex ( $\beta = -0.51$ ,  $t(35) = -3.51$ ,  $p < .01$ ), and Coercive Sex ( $\beta = 0.35$ ,  $t(35) = 2.22$ ,  $p < .05$ ). Internal conflict also explained a significant proportion of Short-term Sex (Adj.  $R^2 = .09$ ,  $F(1, 35) = 4.73$ ,  $p < .05$ ), Homosexual Sex (Adj.  $R^2 = .24$ ,  $F(1, 35) = 12.29$ ,  $p < .01$ ), and Coercive Sex (Adj.  $R^2 = .10$ ,  $F(1, 35) = 4.95$ ,  $p < .05$ ). Internal conflict was not significantly associated with moralization of Unfaithful Sex ( $\beta = 0.11$ , *ns*), Atypical Sex ( $\beta = 0.08$ , *ns*), or Romantic Sex ( $\beta = -0.10$ , *ns*). Further analyses revealed that internal conflict was positively associated with moralization of Coercive Sex for male actors ( $\beta = 0.42$ ,  $t(35) = 2.71$ ,  $p < .05$ ), but not for female actors ( $\beta = 0.21$ , *ns*).

### **Conflict with Neighboring Countries**

As predicted, external conflict with neighboring countries was negatively correlated with cross-cultural moralization of Outgroup Sex ( $\beta = -0.38$ ,  $t(35) = -2.46$ ,  $p < .05$ ) and explained a significant proportion of the variance in Outgroup Sex (Adj.  $R^2 = .12$ ,  $F(1, 35) = 6.06$ ,  $p < .05$ ). External conflict was also significantly correlated with Short-term Sex ( $\beta = -0.46$ ,  $t(35) = -3.68$ ,  $p < .001$ ) and Homosexual Sex ( $\beta = -0.46$ ,  $t(35) = -3.12$ ,  $p < .01$ ). Level of conflict also explained a significant proportion of Short-term Sex (Adj.  $R^2 = .26$ ,  $F(1, 35) = 13.54$ ,  $p < .001$ ) and Homosexual Sex (Adj.  $R^2 = .20$ ,  $F(1, 35) = 9.74$ ,  $p < .01$ ). External conflict was not significantly associated with moralization of Unfaithful Sex ( $\beta = -0.13$ , *ns*), Atypical Sex ( $\beta = -0.22$ , *ns*), Coercive Sex ( $\beta = 0.11$ , *ns*) or Romantic Sex ( $\beta = -0.08$ , *ns*). Sex

differentiated analyses revealed that external conflict was significantly associated with Atypical Sex for male actors ( $\beta = -0.09$ ,  $t(35) = -2.17$ ,  $p < .05$ ) and female actors ( $\beta = -0.08$ ,  $t(35) = -2.55$ ,  $p < .05$ ).

For a summary of above cross-cultural variables, see Table 21.

	Religiosity	HIV	Temperature	Global Conflict	Internal Conflict	External Conflict
Coercive	0.56***	0.65**	0.50**	0.53***	0.35*	0.11
Atypical	0.14	0.41*	0.37**	0.02	0.08	-0.22
Unfaithful	-0.08	0.13	0.13	0.09	0.11	-0.13
Short-term	-0.59***	-0.10	-0.07	-0.29*	-0.30*	-0.46***
Homosexual	-0.78***	-0.36	-0.38*	-0.47**	-0.51**	-0.46**
Outgroup	-0.65***	-0.05	-0.47**	-0.46**	-0.42**	-0.38*
Romantic	-0.26*	-0.20	-0.34**	-0.02	-0.10	-0.08

Note. Standardized  $\beta$  of regression of cross-cultural variables on each Pillar, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

Table 21: Regression of Cross-cultural Variables on Seven Pillars

### Infant Morality

In line with strategic pluralism theory, infant mortality rates were negatively associated with moral judgments of Short-term Sex ( $\beta = -0.29$ ,  $t(35) = -2.05$ ,  $p < .05$ ), Homosexual Sex ( $\beta = -0.54$ ,  $t(35) = -3.79$ ,  $p < .001$ ) and divorce ( $\beta = -.65$ ,  $t(35) = -5.01$ ,  $p < .001$ ). Infant mortality also explained a significant proportion of variance in cross-cultural moral judgments of Short-term Sex (Adj.  $R^2 = .08$ ,  $F(1, 35) = 4.19$ ,  $p < .05$ ), Homosexual Sex (Adj.  $R^2 = .27$ ,  $F(1, 35) = 14.36$ ,  $p < .001$ ), and divorce (Adj.  $R^2 = .40$ ,  $F(1, 35) = 25.09$ ,  $p < .001$ ). Infant mortality did not predict moralization of Unfaithful Sex ( $\beta = 0.00$ ,  $ns$ ). Unexpectedly, infant mortality rates were correlated with Outgroup Sex ( $\beta = -0.51$ ,  $t(35) = -3.48$ ,  $p < .01$ ), Atypical Sex ( $\beta = 0.36$ ,  $t(35) = 2.84$ ,  $p < .01$ ), Coercive Sex ( $\beta = 0.64$ ,  $t(35) = 4.87$ ,  $p < .001$ ), and Romantic Sex ( $\beta = -0.29$ ,  $t(35) = -2.32$ ,  $p < .05$ ). Infant mortality rates also explained a significant proportion of the variance in Outgroup Sex (Adj.  $R^2 = .24$ ,  $F(1,$



35) = 12.08,  $p < .01$ ), Atypical Sex (Adj.  $R^2 = .16$ ,  $F(1, 35) = 8.03$ ,  $p < .01$ ), Coercive Sex (Adj.  $R^2 = .39$ ,  $F(1, 35) = 23.71$ ,  $p < .001$ ), and Romantic Sex (Adj.  $R^2 = .11$ ,  $F(1, 35) = 5.39$ ,  $p < .05$ ). Further analyses revealed that infant mortality was not significantly correlated with moralization of Atypical Sex for either male actors ( $\beta = 0.06$ ,  $ns$ ) or female actors ( $\beta = 0.04$ ,  $ns$ ).

### **Low Birth Weight**

One country did not have data on percentage of newborns with low birth weight. In line with strategic pluralism theory, low birth weight was negatively associated with moral judgments of Homosexual Sex ( $\beta = -0.34$ ,  $t(34) = -2.07$ ,  $p < .05$ ) and divorce ( $\beta = -0.43$ ,  $t(34) = -2.85$ ,  $p < .01$ ). Low birth weight also explained a significant proportion of cross-cultural variance in moralization of Homosexual Sex (Adj.  $R^2 = .09$ ,  $F(1, 34) = 4.29$ ,  $p < .05$ ) and divorce (Adj.  $R^2 = .17$ ,  $F(1, 34) = 8.11$ ,  $p < .01$ ). Low birth weight was not significantly correlated with Short-term Sex, but was trending in the predicted direction ( $\beta = -0.28$ ,  $t(34) = -1.97$ ,  $p = .057$ ) and was not correlated with Unfaithful Sex ( $\beta = -0.10$ ,  $ns$ ). Unexpectedly, low birth weight was significantly associated with Outgroup Sex ( $\beta = -0.41$ ,  $t(34) = -2.60$ ,  $p < .05$ ), Atypical Sex ( $\beta = 0.30$ ,  $t(34) = 2.29$ ,  $p < .05$ ), and Coercive Sex ( $\beta = 0.44$ ,  $t(34) = 2.89$ ,  $p < .01$ ). Low birth weight also explained a significant proportion of cross-cultural variance in moralization of Outgroup Sex (Adj.  $R^2 = .14$ ,  $F(1, 34) = 6.75$ ,  $p < .05$ ), Atypical Sex (Adj.  $R^2 = .11$ ,  $F(1, 34) = 5.24$ ,  $p < .05$ ), and Coercive Sex (Adj.  $R^2 = .17$ ,  $F(1, 34) = 8.34$ ,  $p < .01$ ). Low birth weight did not predict moralization of Romantic Sex ( $\beta = -0.23$ ,  $ns$ ). In line with strategic pluralism theory, further analyses revealed that low birth weight was significantly correlated with moralization of Short-term Sex for male actors ( $\beta = -0.18$ ,  $t(34) = -2.13$ ,  $p < .05$ ) and female actors ( $\beta = -0.14$ ,  $t(34) = -2.12$ ,  $p < .05$ ). Sex differentiated analyses revealed that low birth weight was not correlated with moralization of Homosexual Sex for male

actors ( $\beta = -0.23$ , *ns*) or Atypical Sex for male actors ( $\beta = 0.06$ , *ns*) and female actors ( $\beta = 0.04$ , *ns*).

### **Percentage in Poverty**

Three countries did not have data on percentage in poverty. In line with strategic pluralism theory, poverty was negatively correlated with moralization of divorce ( $\beta = -0.39$ ,  $t(32) = -2.36$ ,  $p < .05$ ) and explained a significant proportion of variance (Adj.  $R^2 = .12$ ,  $F(1, 32) = 5.59$ ,  $p < .05$ ). Poverty did not predict cross-cultural moralization of Short-term Sex ( $\beta = 0.18$ , *ns*), Homosexual Sex ( $\beta = -0.20$ , *ns*), Unfaithful Sex ( $\beta = 0.20$ , *ns*), Outgroup Sex ( $\beta = -0.19$ , *ns*), Atypical Sex ( $\beta = 0.19$ , *ns*), and Romantic Sex ( $\beta = -0.09$ , *ns*). Unexpectedly, poverty was positively correlated with moralization of Coercive Sex ( $\beta = 0.41$ ,  $t(32) = 2.56$ ,  $p < .05$ ) and explained a significant proportion of variance (Adj.  $R^2 = .14$ ,  $F(1, 32) = 6.54$ ,  $p < .05$ ).

### **Gross Domestic Product Per Capita**

In line with strategic pluralism theory, GDP was positively associated with cross-cultural moralization of Short-term Sex ( $\beta = 0.32$ ,  $t(35) = 2.27$ ,  $p < .05$ ) and Homosexual Sex ( $\beta = 0.69$ ,  $t(35) = 5.72$ ,  $p < .001$ ) and explained a significant proportion of variance in Short-term Sex (Adj.  $R^2 = .10$ ,  $F(1, 35) = 5.17$ ,  $p < .05$ ) and Homosexual Sex (Adj.  $R^2 = .47$ ,  $F(1, 35) = 32.69$ ,  $p < .001$ ). GDP did not predict moralization of Unfaithful Sex ( $\beta = -0.26$ , *ns*) or divorce ( $\beta = 0.23$ , *ns*). Unexpectedly, GDP was significantly correlated with moralization of Outgroup Sex ( $\beta = 0.58$ ,  $t(35) = 4.18$ ,  $p < .001$ ) and Coercive Sex ( $\beta = -0.51$ ,  $t(35) = -3.50$ ,  $p < .01$ ) and explained a significant proportion of variance in Outgroup Sex (Adj.  $R^2 = .31$ ,  $F(1, 35) = 17.43$ ,  $p < .001$ ) and Coercive Sex (Adj.  $R^2 = .24$ ,  $F(1, 35) = 12.24$ ,  $p < .01$ ). GDP was not significantly associated with Atypical Sex ( $\beta = -0.11$ , *ns*) and Romantic Sex ( $\beta = 0.23$ , *ns*). Sex differentiated analyses revealed that GDP was not associated with moralization of Short-term Sex for male actors ( $\beta = 0.15$ , *ns*), but was positively associated for female actors

( $\beta = 0.20$ ,  $t(35) = 3.27$ ,  $p < .01$ ). In line with strategic pluralism theory, GDP was negatively associated with moralization of Unfaithful Sex for male actors ( $\beta = -0.12$ ,  $t(35) = -2.06$ ,  $p < .05$ ), but not female actors ( $\beta = -0.04$ , *ns*).

### **Life Expectancy**

In line with strategic pluralism theory, life expectancy was positively associated with cross-cultural moralization of Short-term Sex ( $\beta = 0.33$ ,  $t(35) = 2.35$ ,  $p < .05$ ), Homosexual Sex ( $\beta = 0.62$ ,  $t(35) = 4.70$ ,  $p < .001$ ), and divorce ( $\beta = 0.64$ ,  $t(35) = 4.93$ ,  $p < .001$ ) and explained a significant proportion of variance in Short-term Sex (Adj.  $R^2 = .11$ ,  $F(1, 35) = 5.54$ ,  $p < .05$ ), Homosexual Sex (Adj.  $R^2 = .37$ ,  $F(1, 35) = 22.11$ ,  $p < .001$ ), and divorce (Adj.  $R^2 = .39$ ,  $F(1, 35) = 24.27$ ,  $p < .001$ ). Life expectancy was not significantly correlated with Unfaithful Sex ( $\beta = -0.04$ , *ns*) and Romantic Sex ( $\beta = 0.25$ , *ns*). Unexpectedly, life expectancy was significantly correlated with Outgroup Sex ( $\beta = 0.43$ ,  $t(35) = 2.81$ ,  $p < .01$ ) and Atypical Sex ( $\beta = -0.30$ ,  $t(35) = -2.28$ ,  $p < .05$ ), and Coercive Sex ( $\beta = -0.65$ ,  $t(35) = -5.12$ ,  $p < .001$ ). Life expectancy explained a significant proportion of the variance in Outgroup Sex (Adj.  $R^2 = .16$ ,  $F(1, 35) = 7.88$ ,  $p < .01$ ), Atypical Sex (Adj.  $R^2 = .10$ ,  $F(1, 35) = 5.18$ ,  $p < .05$ ), and Coercive Sex (Adj.  $R^2 = .41$ ,  $F(1, 35) = 26.19$ ,  $p < .001$ ). Further analyses revealed that life expectancy was not significantly correlated with Atypical Sex for male actors ( $\beta = -0.04$ , *ns*) or female actors ( $\beta = -0.02$ , *ns*). Sex differentiated analyses revealed that life expectancy was significantly correlated with Romantic Sex for male actors ( $\beta = 0.17$ ,  $t(35) = 2.30$ ,  $p < .05$ ) and female actors ( $\beta = 0.18$ ,  $t(35) = 2.34$ ,  $p < .05$ ).

For a summary of the harshness of environment analyses see Table 22.

	Infant Mortality	Low Birth Weight	Percentage in Poverty	GDP	Life Expectancy
Coercive	0.64***	0.44**	0.41*	-0.51**	-0.65***
Atypical	0.36**	0.30*	0.19	-0.11	-0.30*
Unfaithful	0.00	-0.10	0.20	-0.26	-0.04
Short-term	-0.29*	-0.28	0.18	0.32*	0.33*
Homosexual	-0.54***	-0.34*	-0.20	0.69***	0.62***
Outgroup	-0.51**	-0.41*	-0.19	0.58***	0.43**
Romantic	-0.29*	-0.23	-0.09	0.23	0.25

Note. Standardized  $\beta$  of regression of indices of hardship on each Pillar, \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$

Table 22: Regression of Indices of Environmental Hardship on Seven Pillars

## Discussion

We found partial support for the majority of our predictions. Incest was universally heavily moralized across religiosity and religious group, but not across region. Similarly, Coercive Sex was universally heavily moralized across religious group, but not region. Religiosity was significantly correlated with moral judgments for 5 of the Seven Pillars of Sexual Morality.

Contrary to our predictions, there was no effect of HIV-prevalence estimates on moralization of sexual behaviors that involve a high-risk of infectious disease transmission. Instead, a more distal index of communicable disease, average temperature, was a better predictor of moralization of Homosexual Sex and Outgroup Sex. One potential explanation for this set of findings is that until very recently humans would not have had access to information concerning the local prevalence rates of sexually transmitted diseases. Instead, humans would only have direct access to distal indices of pathogen prevalence, such as temperature. Future research should investigate the role of other readily available and historically reliable correlates of pathogen prevalence to determine whether cultures have

culturally evolved practices and norms, such as negative moralization of certain types of sex, in response to high environmental risk of infection.

Finally, level of conflict within a country was a reliable and strong predictor of negative moralization of Outgroup Sex. There was a significant effect of global ( $\beta = -0.46$ ), internal ( $\beta = -0.42$ ), and external ( $\beta = -0.38$ ) conflict on negative cultural moralization of Outgroup Sex. These findings have important practical implications for our understanding of intergroup relationships and the activation of outgroup prejudice. Negative moralization of sex with outgroup members was one of the most cross-culturally variable aspects of sexual morality with some countries showing no negative moralization (e.g., Norway = 0.02) and other countries showing harsh negative moralization (e.g., Pakistan = -2.05). Although the underlying coalitional psychology exists in everyone, only in certain environmental conditions does our outgroup psychology become activated. Determining the inputs into the psychological mechanisms that activate or deactivate our coalitional psychology is the key to minimizing outgroup prejudice.

### **Is the evidence consistent with strategic pluralism theory or life history theory?**

Comparing strategic pluralism theory to life history theory, we find consistent evidence in favor of strategic pluralism theory. Although both theories may be operating in tandem, thus essentially cancelling out the effects of one other, all of our significant findings about the effect of environmental harshness on sexual morality support strategic pluralism theory. Based on this study, in harsh and unpredictable environments, individuals tend to value long-term mating strategies characterized by heavy parental investment and biparental care of offspring. Specifically, in harsher environments, people more negatively moralize promiscuous and non-reproductive sexual behaviors. This suite of findings is in line with previous research by Schmitt (2005) on environmental hardship and more restricted sociosexual orientation.

However, the evidence is not definitively against life history theory. One particularly interesting, and unpredicted, finding was the effect of harshness of environment on moral judgments of Coercive Sex. Across cultures, as environmental harshness increased, Coercive Sex was judged less morally wrong. Similarly, as GDP and life expectancy increased, Coercive Sex was judged more harshly. This is in line with research on life history theory that suggests that in harsh and unpredictable environments, people should be more likely to engage in exploitative and opportunistic behavioral strategies (McCullough, Pedersen, Schroder, Tabak & Carver, 2013). Future research is needed to determine whether strategic pluralism theory and life history theory work in conjunction and predict unique domains of variance in cross-cultural sexual attitudes and behavior.

### **Limitations**

Although this research represented a step forward in understanding sexual morality outside of a WEIRD perspective, there are many limitations inherent in any study of this nature. First, since we relied largely upon a university student sample, any cross-cultural variation is likely an underrepresentation of the true magnitude of cross-cultural differences that exist. Second, despite the representative sample of countries included, certain regions (e.g., South Pacific) and religions (e.g., Hinduism) were under-sampled. Future investigations should attempt to include a larger and more representative sample of cultures within each major religious and geographic group. Third, due to problems with participant recruitment and data collection timeline, some cultures have very small sample sizes (e.g., Austria,  $N = 89$ ) so summary statistics of those cultures should be interpreted cautiously as they are unlikely to be representative of the larger culture.

### *Summary*

In a large ( $N = 6,101$ ) cross-cultural study including 37 countries spanning 6 continents, we investigated various cross cultural predictor variables on moralization of the

Seven Pillars of Sexual Morality. Using an abbreviated form of the Sexual Morality Inventory, we found that religiosity, indices of communicable disease prevalence, and indices of internal and external levels of conflict predict cross-cultural sexual morality. Furthermore, we found evidence supporting strategic pluralism theory on the role of environmental harshness and short-term mating orientation. Future directions and limitations of the current study are discussed.

## Chapter 7: Conclusions

Sexual morality is an under-researched area within the field of moral psychology. Theories of morality have focused upon discovering abstract principles that apply across content areas, such as harm, fairness, and cooperation. Moreover, moral attitudes toward incest, homosexuality, or promiscuity have historically been treated as isolated phenomena, despite the fact that all fall within the sexual domain—arguably the most heavily moralized domain of human conduct. The current dissertation fills these gaps in the literature by presenting a research program that investigates sexual morality comprehensively and explores the diverse inputs to sexual morality—including individual and cross-cultural variables. This dissertation contributes to our understanding of morality beyond the domain-general approaches to studying morality. Indeed, it suggests a dramatic shift in theorizing about morality—that morality cannot be understood without delving deeply into the specific content domains that are moralized. The studies presented here represent a move toward a more comprehensive and content-saturated understanding of morality. The scope of this dissertation leads to several major findings and future directions that will be addressed in this chapter. First, by investigating sexual morality across contexts and individuals, we can gain a more multidimensional and content-saturated understanding of morality. Importantly, this broad approach allows for several big picture conclusions to be drawn.

### *Sexual Morality is Multidimensional*

One key finding of this dissertation is that sexual morality is not unidimensional. Instead sexual morality spans a range of behaviors, including sexual coercion, affairs, incest, bestiality, sexual economics, casual sex, long-term sex, and same sex orientation. Crucially, Americans categorize sexual morality into seven clusters of behavior about which they reason in distinct ways. The seven-factor structure of sexual morality is an entirely new discovery made by this dissertation research. This discovery opens up important new lines of inquiry



for future research. Research on morality within the United States should include a more comprehensive taxonomy of moralized sexual behavior. It is our hope that the development and validation of the Sexual Morality Inventory will encourage others to incorporate a more comprehensive study of sexual morality in their research.

The Seven Pillars were only discovered within an American sample, albeit a structure that replicated robustly across two different large samples. Would the same classifications of sexual behaviors appear in other cultures? An exciting future direction of research would be to develop taxonomies of sexual morality in other cultures and see which categories of behavior show cross-cultural universality and which are unique to a specific culture. Furthermore, even if a given category was found reliably across cultures, the cultural definition of the category could vary. For example, if Unfaithful Sex turns out to be a universal category of moralized sexual behavior, countries may define infidelity more narrowly (e.g., only sexual affairs) or more broadly (e.g., spending time alone with a member of the opposite sex). Future research could be devoted to uncovering the structure of sexual morality in a representative sample of cultures.

### *Sexual Morality is Context-Dependent*

Just as sexual morality is not a single phenomenon, people's moral reasoning across the distinct categories of sexual behavior is highly nuanced. Results from the individual differences project suggest that sexual morality is in the eye of the beholder. Personal sexual morality is correlated with several internal factors, such as concern for moral foundations, sociosexual orientation, and personality. Importantly, the distinct categories of sexual behavior were not influenced by the same endogenous factors. Greater concern for the group-oriented moral foundations of loyalty, authority, and purity led to harsher negative moralization of casual sex and homosexuality. Greater concern for the individuating moral

foundations of harm and fairness notably did *not* influence moralization of casual sex and homosexuality.

Conversely, the individuating moral foundations, but not the group-oriented moral foundations, predicted harsher negative moralization of sexual behaviors that inflict costs, for instance sexual assault and sexual affairs. These findings lead to two major conclusions: (1) different individuals can judge the same sexual behavior differently and (2) the same underlying factor can influence moralization of one category of sexual behavior independently of moralization of other categories of sexual behavior. Within the current literature on sexual morality, the moral foundation of Purity is often broadly associated with sexual morality and is the only moral foundation that includes an item on sexuality (chastity) (Graham et al., 2013; Haidt & Hershey, 2001). However, concern for the principle of purity did not correlate with moral judgments across all categories of sexual morality. Purity correlated with moralization of incest, infidelity, casual sex, and homosexuality. Greater concern for purity did not predict moral judgments of coercive sexual behavior. This suggests that the abstract principle underlying sexual morality cannot be reduced to a concern for purity and that sexual morality is much more context-dependent than previously assumed in the literature. Future research on morality should incorporate a diversity of items covering the sexual domain rather than relying upon a single item.

### *Sexual Morality is Not Impartial*

People often assume that their moral calculations are based upon rationally derived or culturally taught impartial rules of behavior, such as “do unto others as you would like done unto you.” However, the individual differences project highlighted the fact that people calibrate their sexual morality based on their preferred sexual strategies and on their previous sexual experiences. For example, people who are pursuing a slow life history strategy judge casual sex more negatively. And people who have cheated on a romantic partner in the past

judge unfaithful sex more positively. Given the context-sensitive nature of sexual morality, future studies should investigate perspectival shifts in moral judgments of the sexual domain.

Sexual behavior is often judged differently depending on the perspective of the evaluator. We expect that people will be sensitive to the identities and characteristics of victims and perpetrators while making moral evaluations concerning sex. For instance, the same moral violation will elicit harsh negative judgments from the victim's close relationship partners, but may receive less harsh judgments from unrelated strangers or enemies. We expect, for example, that a moral violation committed by oneself will not be judged identically to a similar moral violation committed by an intrasexual rival. What counts as sexual infidelity has been shown to vary depending on whether people are judging their own or their romantic partner's behavior (Gute, Eshbaugh, & Wiersma, 2008). Future research could investigate other instances of sexual moral hypocrisy.

Furthermore, people may have unique sets of sexual moral rules that apply to members of their different social groups. Parents, for example, may benefit from their children (especially their daughters) having a restricted sociosexuality, while children may benefit from engaging in casual sex. This parent-offspring conflict of interest could lead to generational differences in moralization of short-term sex. This particular form of conflict can help to explain daughter-guarding behavior (Perilloux, Fleischman, & Buss, 2008). Additionally, sexual moral violations in which outgroup members are the victims may not be moralized as harshly as when ingroup members are victimized. Thus, not all perpetrators or victims are created equal. A deeper understanding of the mechanisms underlying sexual morality will help to uncover biases in people's moral intuitions and behaviors. This information could then be used to guide public policy concerning morality to create more impartial and egalitarian policies.

*The Role of Emotions in Sexual Morality*

Another fruitful avenue of future study involves the role of disgust in moral reasoning about the sexual domain. Disgust evolved in the context of pathogen avoidance toward spoiled food, bodily effluvia, and other high-risk disease vectors (Tybur, Lieberman, Kurzban, & DeScioli, 2013). Higher propensity toward disgust could have steered certain individuals away from foods, people, and objects that posed greater risks of pathogens. For example, pregnant women in their first trimester, when fetuses are particularly vulnerable to disease, experience heightened disgust-sensitivity (Fessler, Eng, & Navarrete, 2005). This raises the possibility that greater disgust-sensitivity leads individuals to avoid novelty and embrace culturally traditional norms of behavior.

In the individual differences project, increased disgust-sensitivity was correlated with harsher moral judgments of all culturally stigmatized sexual behaviors including sexual coercion, incest, sexual affairs, homosexuality, and promiscuity. Interestingly, the effect of disgust-sensitivity was not limited to sexual behaviors that pose a high risk of pathogen transmission. Nor was the effect limited to sexual behaviors that caused direct harm to others, such as coercion and infidelity. Previous research suggests that inducing disgust through smell, vision, or taste leads to more negative moralization and harsher punishment across a variety of contexts including theft, incest, homosexuality, and bribery (Chapman & Anderson, 2013; Eskine, Kacirik, & Prinz, 2011; Schnall, Haidt, Clore, & Jordan, 2008).

There is evidence to suggest that the link between disgust-sensitivity and conservative morality is particularly strong in the sexual domain (Crawford, Inbar, & Maloney, 2014). For instance, disgust has been linked to the moralization of various sexual acts, including male homosexuality (Inbar, Pizarro, Knobe, & Bloom, 2009). Disgust may be particularly important in moralization within the sexual realm because it originally evolved to motivate avoidance of infectious diseases (e.g., sexually transmitted infections). Sexual arousal, on the other hand, has been shown to decrease people's disgust reaction and motivate sexual

behavior (Ariely & Loewenstein, 2006). Thus, the emotions of disgust and sexual arousal are essentially competing motivational mechanisms. By inducing disgust or sexual arousal, future studies should be able to predictably alter people's judgments of and willingness to engage in moralized sexual behaviors.

### *The Importance of Religiosity*

Religiosity was one the strongest predictors of negative moralization of harmless, non-traditional sexual behaviors both within the United States and between cultures. Specifically, more religious individuals and countries rated short-term sex and homosexual sex more morally wrong than less religious individuals and countries. This research highlights the power of religion to predict variation in sexual morality across individuals and cultures. This is in line with evidence that suggests that most 'big god' religions endorse and support a long-term mating strategy (Rowatt & Schmitt, 2003; Noranzyan, 2015; Weeden, Cohen, & Kenrick, 2008; Weeden & Kurzban, 2013). Several questions remain (1) do individuals turn to religion because it reinforces their preferred mating strategies? and (2) does religion create long-term mating strategies in its constituents? The impact of religion on cultural norms surrounding sexuality may also help to explain the cultural evolution of religion. For example, religion could benefit individuals in certain environments by encouraging them and their kin to pursue a long-term mating strategy even when they are tempted to pursue short-term mating opportunities. Additionally, those already pursuing a long-term mating strategy could benefit from religion by reducing the costs inflicted upon them by short-term maters, such as infidelity, mating competition, and defection from relationships.

### *Universality and Variability Across Cultures*

This dissertation highlights the importance of studying morality beyond simply Western, Educated, Industrialized, Rich, and Democratic cultures. Investigating moral

reasoning in a large sample of cultures allows us to identify which sexual behaviors are universally moralized across cultures and which are highly variable. One example of a cross-culturally negatively moralized sexual behavior is coercive sex. The most negative average moral rating for coercive sex was in Norway (-2.98) and the least negative was in Uganda (-2.43)—still an extremely negative moral judgment. These findings demonstrate that at least some sexual behavior is judged similarly across region, religion, and culture. From an evolutionary perspective, we would expect universal negative moralization of sexual assault because of the extreme fitness costs inflicted upon the victims and the close relationship partners of victims.

Other sexual behaviors show large variation in moralization across region, religion, and culture. Sex with outgroup members, for example, shows large cross-cultural variation. The individual differences project, which only included American participants, found no significant effects of any of the individual differences measures on moralization of outgroup sex. This is because sex with rival group members was consensually viewed as morally neutral in the United States. However, outgroup sex was very harshly negatively moralized in many other countries. For example, the most negative average moral rating for outgroup sex was in Algeria (-2.74) while the most positive moral rating was in Norway (0.02). Furthermore, by investigating across cultures, we found significant effects of religiosity, level of conflict, and environmental harshness on moralization of sex with rival group members.

### *Real World Impact*

Lastly, findings from this dissertation have real world implications for predicting beliefs about hotly debated sociopolitical issues, such as gay rights and prostitution. Although we have a decent understanding of the influence of religiosity and political orientation on sexual norms, this comprehensive approach will allow researchers to investigate the role of life history strategy and personality on sexual morality. Because we find a correlation

between sexual behavior and sexual morality, these findings have important implications for predicting sexual behaviors, such as likelihood of engaging in sexual coercion or risky sexual behaviors. If we can raise awareness of the factors that are highly correlated with sexual risk taking, people can incorporate the findings into sexual education courses to avoid the negative ramifications of risky sexual practices, such as teenage pregnancy and the spread of sexually transmitted infections. And if we find reliable correlates of predatory sexual behavior, we can use this information to develop intervention and rehabilitation programs to prevent sexual coercion.

### *Summary*

Taken together the studies reported in this dissertation showcase the conclusion that sexual morality is highly nuanced across factors, individuals, and cultures. Disgust-sensitivity and religiosity were especially powerful predictors of variation in sexual morality. The nature of this dissertation, looking across individuals and cultures, allows us to answer questions that span the range of sexual behaviors. Additionally, this dissertation addresses the universality and variability in people's sexual morality. Sexual morality is a wide-open area of research with potential for novel contributions to the field of moral psychology.

## Appendix A: 26-item Sexual Morality Questionnaire

### Your Judgments of Events and Behaviors You Consider Morally Good or Bad

**INSTRUCTIONS:** In this study, we are interested in your judgments of events and behaviors. Some you will evaluate to be morally right or good in your personal opinion; others you will evaluate to be morally wrong or bad in your personal opinion. There are no right or wrong answers.

Please use the scale below (*ranging from +3 to -3*) to rate the morality of (1) each act performed by, or event experienced by, a man and (2) each act performed by, or event experienced by, a woman. For some events and behaviors, your moral judgment may be the same for men and women; for others, your moral judgments may be different for men and women.

**Use this scale:**

- +3 = extremely morally good**
- +2 = moderately morally good**
- +1 = slightly morally good**
- 0 = neither morally good nor morally bad**
- 1 = slightly morally bad**
- 2 = moderately morally bad**
- 3 = extremely morally bad**

#### Act or Event Performed or Experienced By:

<u>Male</u>	<u>Female</u>	
_____	_____	(1) Having sex before marriage
_____	_____	(2) Remaining a virgin until age 18
_____	_____	(3) Having a one-time sexual encounter without commitment
_____	_____	(4) Having a reputation as an easily-accessible sexual partner
_____	_____	(5) Passionately kissing someone of the same sex
_____	_____	(6) Refusing to have sex with one's spouse
_____	_____	(7) Being married to two or more people at the same time (e.g., having two wives or two husbands)
<u>Male</u>	<u>Female</u>	
_____	_____	(8) Getting divorced
_____	_____	(9) Having sex with someone without being in love with them
_____	_____	(10) Making sure one's romantic partner is sexually satisfied
_____	_____	(11) Having sex with a 15 year old



- \_\_\_\_\_ (13) Having a sexual affair with someone who is already in a steady relationship
- \_\_\_\_\_ (14) Having sex with someone of the same sex
- \_\_\_\_\_ (15) Marrying someone against a parent's wishes
- \_\_\_\_\_ (16) Having sex with one's romantic partner in order to have a baby
- \_\_\_\_\_ (17) Paying someone money to have sex with them
- \_\_\_\_\_ (18) While involved in a steady relationship, having a sexual affair with someone else
- \_\_\_\_\_ (19) Physically forcing someone to have sex against their will
- \_\_\_\_\_ (20) Marrying someone of the same sex
- \_\_\_\_\_ (21) Having sex with someone because they offered to pay money
- \_\_\_\_\_ (22) Remaining sexually faithful to one's romantic partner
- \_\_\_\_\_ (23) Having sex with one's cousin
- \_\_\_\_\_ (24) Being forced to have sex against one's will
- \_\_\_\_\_ (25) Having sex with someone from a rival or enemy group
- \_\_\_\_\_ (26) Receiving money for letting others sleep with one's spouse

## Appendix B: 70-item Sexual Morality Questionnaire

### EVENTS AND BEHAVIORS AFFECTING MORAL JUDGMENTS

**INSTRUCTIONS:** In this study, we are interested in your judgments of events and behaviors. Some you will evaluate to be morally right or good in your opinion; others you will evaluate to be morally wrong or bad in your opinion. There are no right or wrong answers.

Please use the scale below (*ranging from -3 to +3*) to provide your moral judgment of the act for men and for women. For some events and behaviors, your moral judgment may be the same for men and women; for others, your moral judgments may be different for men and women.

Use this scale:

- +3 = extremely morally good**
- +2 = moderately morally good**
- +1 = slightly morally good**
- 0 = neither morally good nor morally bad**
- 1 = slightly morally bad**
- 2 = moderately morally bad**
- 3 = extremely morally bad**

1. Having sex before marriage
2. Remaining a virgin until age 18
3. Having a one-time sexual encounter without commitment
4. Having a reputation as an easily-accessible sexual partner
5. Having sex with someone without being in love with them
6. Misleading someone about intentions in order to have sex with them
7. Having sex with two people in the same night
8. Having a sexual orgy with strangers
9. Cuddling with a romantic partner after sex
10. Telling one's romantic partner how much he/she loves them during sex
11. Watching pornography
12. Frequently going to a strip club
13. Performing oral sex on one's romantic partner
14. Receiving oral sex from one's romantic partner
15. Performing anal sex on one's romantic partner
16. Receiving anal sex from one's romantic partner
17. Passionately kissing someone of the same sex
18. Having sex with someone of the same sex

20. Having sex with one's sibling or one's parent
21. Having sex with one's cousin
22. An adult having sex with an 8 year old child
23. Having sex with an animal
24. Having sex with someone who is dead
25. Having sex with a 15 year old
26. Paying someone money to have sex with them
27. Having sex with someone because they offered to pay money
28. Receiving money for letting others sleep with one's spouse
29. Drugging a person in order to have sex with them
30. Physically forcing someone to have sex against their will
31. Verbally pressuring someone into having sex against their will
32. Being a victim of being forced to have sex against one's will
33. Having sex with someone who is mentally disabled so they cannot give consent
34. Having sex with someone who is too intoxicated to know what is going on
35. Asking someone for verbal consent before having sex with them
36. Secretly watching someone undress without their knowledge
37. Rubbing one's genitals against a non-consenting person
38. Exposing one's genitals to a stranger (e.g. flashing)
39. Sending unsolicited pictures of one's genitals to another person
40. Dressing up in opposite-sex clothing for sexual pleasure
41. Enjoying inflicting physical pain on a partner during sex
42. Enjoying receiving physical pain from a partner during sex
43. While involved in a steady relationship, having a sexual affair with someone else
44. While involved in a steady relationship, having an emotional affair with someone else
45. Remaining sexually faithful to one's romantic partner
46. Having sex with a friend's romantic partner
47. Having sex with a friend's former romantic partner after they had broken up
48. Having an ongoing sexual affair with someone who is already in a steady relationship
49. Having an ongoing emotional affair with someone who is already in a steady relationship
50. Having a brief sexual encounter with a married person when their partner is out of town
51. Not disclosing a sexually transmitted infection (STI or STD) to one's romantic partner
52. Having unprotected sex after discovering that one has a sexually transmitted infection (STI or STD)
53. Getting tested for sexually transmitted infections (STIs or STDs) regularly to make sure one is disease-free

54. Being married to two or more people at the same time (e.g., having two wives or two husbands)
55. Practicing consensual non-monogamy, that is openly being in a sexual relationship with more than one person at a time (e.g. polyamory)
56. Having sex with someone of a different race
57. Marrying with someone from a different religious group
58. Having sex with someone from a rival or enemy group
59. Telling a partner that one is using contraception when not actually doing so
60. Sharing a naked picture of one's former romantic partner
61. Being honest about one's sexual history (e.g. the number or identity of one's previous sexual partners)
62. While in a position of power (e.g. boss or teacher), having sex with a subordinate (e.g. employee or student)
63. Marrying someone against a parent's wishes
64. Getting divorced
65. Refusing to have sex with one's marriage partner
66. Using contraception to avoid pregnancy
67. Having an abortion or asking partner to have an abortion
68. Having sex with one's partner in order to have a baby
69. Having sex with a boss or teacher in order to get special favors like a promotion or grade
70. Stalking a potential or previous romantic partner after being sexually rejected

## Appendix C: Sexual Morality Inventory

1. Physically forcing someone to have sex against their will
2. Having sex with an animal
3. Drugging a person in order to have sex with them
4. Having sex with someone who is mentally disabled so they cannot give consent
5. Having sex with one's parent
6. Having sex with a dead body
7. Having sex with one's sibling
8. Having sex with someone who is too intoxicated to know what is going on
9. Verbally pressuring someone into having sex against their will
10. Having sex with a friend's romantic partner
11. Having a brief sexual encounter with a married person when their partner is out of town
12. While involved in a steady relationship, having a sexual affair with someone else
13. Having an ongoing sexual affair with someone who is already in a steady relationship with someone else
14. Having sex with one's cousin
15. Having an ongoing emotional affair with someone who is already in a steady relationship with someone else
16. While involved in a steady relationship, having an emotional affair with someone else
17. Having sex with someone because they offered to pay money
18. Paying someone money to have sex with them
19. Having a reputation as an easily-accessible sexual partner
20. Having sexual relations with both men and women (e.g. bisexual sexuality)
21. Having a one-time sexual encounter without commitment
22. Watching pornography
23. Having sex with someone of the same sex
24. Having sex with someone without being in love with them
25. Passionately kissing someone of the same sex
26. Marrying someone of the same sex
27. Having sexual relations exclusively with the same sex
28. Marrying someone whose political views are strongly opposed to one's own
29. Marrying someone from a different religious group
30. Having sex with someone of a very different ethnic group
31. Having sex with someone of a different race
32. Marrying someone from a very different social class
33. Having sex with one's partner in order to have a baby
34. Cuddling with one's romantic partner after sex
35. Telling one's romantic partner "I love you" during sex
36. Being honest about one's sexual history (e.g. the number or identity of one's previous sexual partners)
37. Making sure one's romantic partner is sexually satisfied
38. Remaining sexually faithful to one's romantic partner

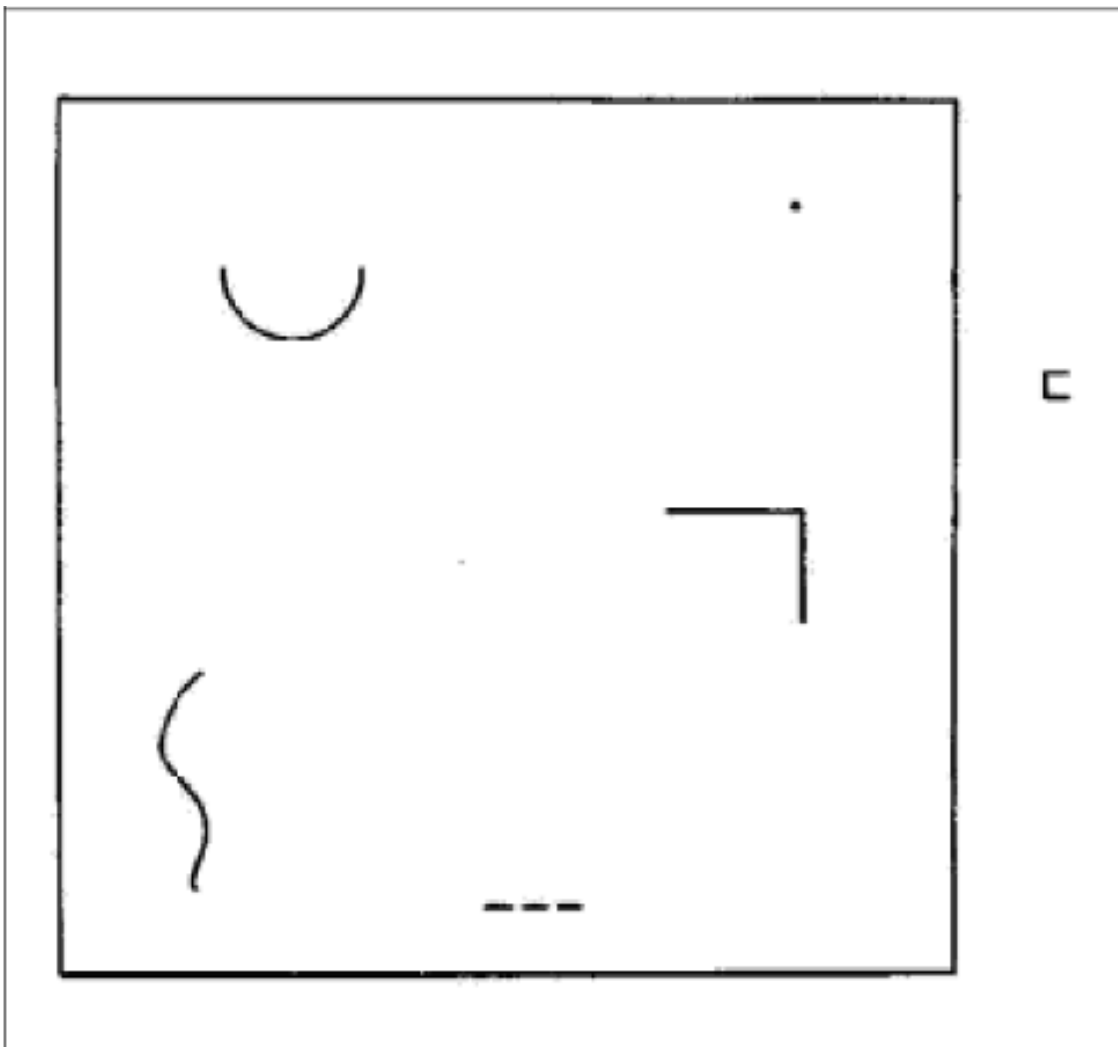
## Appendix D: Cross Cultural Daily Life Questionnaire

Your code: \_\_\_\_\_ (please write some code here, you will be asked to write it again on a different questionnaire sheet)

### A. Test for Drawing Production

In front of you is an incomplete drawing. The artist who started it was interrupted before he or she actually knew what should become of it. You are asked to continue with this incomplete drawing. You are allowed to draw whatever you wish. You cannot draw anything wrong. Everything you put on the paper is correct. Please, make a title. When you finish your drawing, please, give a sign, so that the experimenter can tell you what follows.

You have 5 minutes for this task.



Your code: \_\_\_\_\_ (please use the same code you used in the drawing test)

### B. Personal information

1. Sex (please circle one): Male      Female

2. **Age** (in years): \_\_\_\_\_

3. **Relationship status** (please circle one):

Single      Dating      Engaged      Married      Divorced      Widowed

4. If you are in a relationship, for **how long** have you been in it (years+months): years : \_\_\_\_\_  
months: \_\_\_\_\_

5. How many **children** do you have? \_\_\_\_\_

**6. Education**

- no formal education
- primary school
- secondary school
- high school or technical college
- bachelor, masters or higher degree

7. For how many **years** were you **studying**? (starting from primary school) years:  
\_\_\_\_\_

8. What **kind of studies** you have (if you are a student, or have higher education):  
\_\_\_\_\_

9. **Economic situation** compared to the average in my country (please circle one):

Much lower than average      Lower than average      Average      Higher than average      Much higher than average

10. Please try to assess how difficult it is for your family to meet the monthly payments (please circle one):

Not at all      1      2      3      4      5      6      7      Extremely  
Difficult      Moderately      Difficult

11. Do you have **religious affiliation**?      YES      NO

12. If yes, what is your current religious affiliation? \_\_\_\_\_

13. How much do you agree with the following statement: **“I am very religious”** (please circle one):

Strongly disagree      Disagree      Neither agree nor disagree      Agree      Strongly agree

**C. Relationships**

In this study, we are interested in processes that happen within relationships. Read each of the following statements, filling in the blank spaces with the name of one person you love or care

for deeply. **Only complete this scale if you have a person you love or care for deeply. If you do not have such a person, please skip this scale and continue with the Scale C.**

Rate your agreement with each statement according to the following scale, and mark the appropriate number between 1 (not at all) and 9 (extremely).

	Not at all								Extremel
1. I am actively supportive of _____'s well-being.	1	2	3	4	5	6	7	8	9
2. I have a warm relationship with _____.	1	2	3	4	5	6	7	8	9
3. I am able to count on _____ in times of need.	1	2	3	4	5	6	7	8	9
4. _____ is able to count on me in times of need.	1	2	3	4	5	6	7	8	9
5. I am willing to share myself and my possessions with _____.	1	2	3	4	5	6	7	8	9
6. I receive considerable emotional support from _____.	1	2	3	4	5	6	7	8	9
7. I give considerable emotional support to _____.	1	2	3	4	5	6	7	8	9
8. I communicate well with _____.	1	2	3	4	5	6	7	8	9
9. I value _____ greatly in my life.	1	2	3	4	5	6	7	8	9
10. I feel close to _____.	1	2	3	4	5	6	7	8	9
11. I have a comfortable relationship with _____.	1	2	3	4	5	6	7	8	9
12. I feel that I really understand _____.	1	2	3	4	5	6	7	8	9
13. I feel that _____ really understands me.	1	2	3	4	5	6	7	8	9
14. I feel that I can really trust _____.	1	2	3	4	5	6	7	8	9
15. I share deeply personal information about myself with _____.	1	2	3	4	5	6	7	8	9
16. Just seeing _____ excites me.	1	2	3	4	5	6	7	8	9
17. I find myself thinking about _____ frequently during the day.	1	2	3	4	5	6	7	8	9
18. My relationship with _____ is very romantic.	1	2	3	4	5	6	7	8	9
19. I find _____ to be very personally attractive.	1	2	3	4	5	6	7	8	9
20. I idealize _____.	1	2	3	4	5	6	7	8	9
21. I cannot imagine another person making me as happy as _____ does.	1	2	3	4	5	6	7	8	9
22. I would rather be with _____ than with anyone else.	1	2	3	4	5	6	7	8	9
23. There is nothing more important to me than my relationship with _____.	1	2	3	4	5	6	7	8	9
24. I especially like physical contact with _____.	1	2	3	4	5	6	7	8	9
25. There is something almost "magical" about my relationship with _____.	1	2	3	4	5	6	7	8	9
26. I adore _____.	1	2	3	4	5	6	7	8	9
27. I cannot imagine life without _____.	1	2	3	4	5	6	7	8	9
28. My relationship with _____ is passionate.	1	2	3	4	5	6	7	8	9
29. When I see romantic movies or read romantic books I think of _____.	1	2	3	4	5	6	7	8	9
30. I fantasize about _____.	1	2	3	4	5	6	7	8	9
31. I know that I care about _____.	1	2	3	4	5	6	7	8	9
32. I am committed to maintaining my relationship with _____.	1	2	3	4	5	6	7	8	9



33. Because of my commitment to _____, I would not let other people come between us.	1	2	3	4	5	6	7	8	9
34. I have confidence in the stability of my relationship with _____.	1	2	3	4	5	6	7	8	9
35. I could not let anything get in the way of my commitment to _____.	1	2	3	4	5	6	7	8	9
36. I expect my love for _____ to last for the rest of my life.	1	2	3	4	5	6	7	8	9
37. I will always have a strong responsibility for _____.	1	2	3	4	5	6	7	8	9
38. I view my commitment to _____ as a solid one.	1	2	3	4	5	6	7	8	9
39. I cannot imagine ending my relationship with _____.	1	2	3	4	5	6	7	8	9
40. I am certain of my love for _____.	1	2	3	4	5	6	7	8	9
41. I view my relationship with _____ as permanent.	1	2	3	4	5	6	7	8	9
42. I view my relationship with _____ as a good decision.	1	2	3	4	5	6	7	8	9
43. I feel a sense of responsibility toward _____.	1	2	3	4	5	6	7	8	9
44. I plan to continue in my relationship with _____.	1	2	3	4	5	6	7	8	9
45. Even when _____ is hard to deal with, I remain committed to our relationship.	1	2	3	4	5	6	7	8	9

#### D. Events and behaviors affecting moral judgments

**INSTRUCTIONS:** In this study, we are interested in the effects of certain events and behaviors on *moral judgments* about people who perform these acts or experience these events. Some will be likely viewed as morally good in the eyes of people in your culture; others will be likely viewed as morally bad in the eyes people in your culture.

Please use the scale below (*ranging from +3 to -3*) to rate the likely effects of each act or event on moral judgments (1) for males (event happens to or is performed by a man) and (2) for females (event happens to or is performed by a women). For some events and behaviors, the effects on moral judgments may be the same for men and women; for others, the effects on moral judgments may be different for men and women.

**Use this scale:**

**+3 = extremely morally good**

**+2 = moderately morally good**

**+1 = slightly morally good**

**0 = neither morally good nor morally bad**

**-1 = slightly morally bad**

**-2 = moderately morally bad**

**-3 = extremely morally bad**

**Effect on:**

**Male**

**Female**

(1) Having sex before marriage

- |       |       |      |  |
|-------|-------|------|--|
| _____ | _____ | (2)  | Remaining a virgin until age 18  |
| _____ | _____ | (3)  | Having a one-time sexual encounter without commitment  |
| _____ | _____ | (4)  | Having a reputation as an easily-accessible sexual partner                                       |
| _____ | _____ | (5)  | Passionately kissing someone of the same sex   |
| _____ | _____ | (6)  | Refusing to have sex with one's marriage partner   |
| _____ | _____ | (7)  | Being married to two or more people at the same time (e.g.,<br>having two wives or two husbands) |
| _____ | _____ | (8)  | Getting divorced   |
| _____ | _____ | (9)  | Having sex with someone without being in love with them  |
| _____ | _____ | (10) | Making sure one's partner is sexually satisfied and happy  |
| _____ | _____ | (11) | Having sex with a 15 year old  |
| _____ | _____ | (12) | Having sex with one's sibling or one's parent  |
| _____ | _____ | (13) | Having a sexual affair with someone who is already in a<br>steady relationship                   |
| _____ | _____ | (14) | Having sex with someone of the same sex  |
| _____ | _____ | (15) | Marrying someone against a parent's wishes   |
| _____ | _____ | (16) | Having sex with one's partner in order to have a baby  |
| _____ | _____ | (17) | Giving someone money to have sex with them   |
| _____ | _____ | (18) | While involved in a steady relationship, having a sexual<br>affair with someone else             |
| _____ | _____ | (19) | Physically forcing someone to have sex against their will  |
| _____ | _____ | (20) | Marrying someone of the same sex   |
| _____ | _____ | (21) | Having sex with someone because they offered to pay<br>money                                     |
| _____ | _____ | (22) | Remaining sexually faithful to one's romantic partner  |
| _____ | _____ | (23) | Having sex with one's cousin   |
| _____ | _____ | (24) | Being forced to have sex against one's will  |
| _____ | _____ | (25) | Having sex with someone from a rival or enemy group  |
| _____ | _____ | (26) | Receiving money for letting others sleep with<br>one's spouse                                    |

### **E. Interpersonal behaviors**

In this study, we are interested in behaviors of people. Particularly, we would like to assess the frequency of various types of touch.

1. What is the age of your partner (if you have a partner)?  
 \_\_\_ years
2. What is the age of your youngest child (if you have children)?  
 \_\_\_ years

3. How many people live in your household?  
 \_\_\_ people
4. Do you work together with other people?  
 Yes  No

***Interpersonal touch***

<p>Have you met your partner last week?  <input type="radio"/> No <input type="radio"/> Yes          if yes: have you touched your partner?  <input type="radio"/> No <input type="radio"/> Yes</p> <p>Have you met your youngest child last week?  <input type="radio"/> No <input type="radio"/> Yes          if yes: have you touched your child?  <input type="radio"/> No <input type="radio"/> Yes</p> <p>Have you met a female friend last week?  <input type="radio"/> No <input type="radio"/> Yes          if yes: have you touched your female friend?  <input type="radio"/> No <input type="radio"/> Yes</p>	<p>Have you met a male friend last week?  <input type="radio"/> No <input type="radio"/> Yes          if yes: have you touched your male friend?  <input type="radio"/> No <input type="radio"/> Yes</p> <p>Have you met a female stranger last week?  <input type="radio"/> No <input type="radio"/> Yes          if yes: have you touched the female stranger?  <input type="radio"/> No <input type="radio"/> Yes</p> <p>Have you met a male stranger last week?  <input type="radio"/> No <input type="radio"/> Yes          if yes: have you touched the male stranger?  <input type="radio"/> No <input type="radio"/> Yes</p>
---	--

Now we are going to ask you specifically about whom you touched last week and which kind of touch you did apply. Types of touch are shown on the left side and persons you may have touched are shown in the columns. Please mark, whom you have touched in the last week.

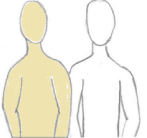

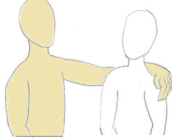




*Example: If you touched your partner, a female and a male stranger in the following way:*



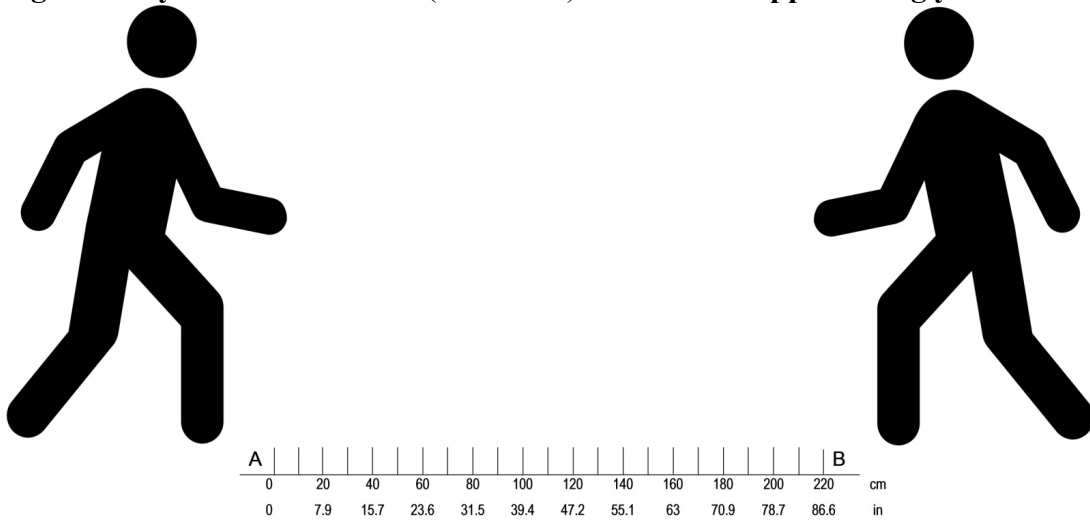
, please indicate

In the last week: have you done this kind of touch?	To your partner	To your youngest child	To a female friend	To a male friend	To a female stranger	To a male stranger
	X				X	X

*Please indicate for EACH kind of touch, whether or not you touched EACH person in this way*

<b>In the last week:</b> Have you done this kind of touch?	To your partner	To your youngest child	To a female friend	To a male friend	To a female stranger	To a male stranger
 Casual, random physical contact						
 Handshake						
 Embrace						
 Stroke						
 Kiss						
 Hit						
 Hug						

Imagine that you are a Person A (on the left). Person B is approaching you.



	Preferred distance
If she is a <b>female stranger</b> , how close can he/she get to you for you to feel comfortable in a conversation? Please indicate the distance in cm.	<b>Cm</b>
If he is a <b>male stranger</b> , how close can he/she get to you for you to feel comfortable in a conversation? Please indicate the distance in cm.	<b>Cm</b>
If she is a <b>female acquaintance (you know her, but not well)</b> , how close can she get to you for you to feel comfortable in a conversation? Please indicate the distance in cm.	<b>Cm</b>
If he is a <b>male acquaintance (you know him, but not well)</b> , how close can he get to you for you to feel comfortable in a conversation? Please indicate the distance in cm.	<b>Cm</b>
If she is a <b>female close person (a friend or a relative)</b> , how close can she get to you for you to feel comfortable in a conversation? Please indicate the distance in cm.	<b>Cm</b>
If he is a <b>male acquaintance close person (a friend or a relative)</b> , how close can he get to you for you to feel comfortable in a conversation? Please indicate the distance in cm.	<b>Cm</b>

## F. Partnership

### Ideal Long-term Mate

For the following questions, we are interested in what you desire in an **ideal long-term mate (e.g. committed, romantic relationship)**. Each of the following is a trait that a potential mate might have. For each trait, please select the option that best represents your ideal long-term mate. Please remember, we are interested in your preferences for **ideal long-term (committed, romantic) mates**.

Very unintelligent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very intelligent
Very unkind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very kind
Very unhealthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very healthy
Very physically unattractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very physically attractive
Very poor financial prospects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very good financial prospects

**Self-rating**

For the following questions, we are interested in where **you** fall on each of these traits. For each of the following traits, please select the option that best represents **you**.

Very unintelligent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very intelligent
Very unkind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very kind
Very unhealthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very healthy
Very physically unattractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very physically attractive
Very poor financial prospects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very good financial prospects

**Your Actual Long-term Mate**

For the following questions, we are interested in **your actual committed, long-term mate**. If you are currently in a committed, long-term mateship (e.g. committed, romantic relationship), please select the option that best represents your actual committed, long-term mate. If not, please continue with the next scale.

Very unintelligent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very intelligent
Very unkind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very kind
Very unhealthy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very healthy

Very physically unattractive

Very physically attractive

Very poor financial prospects

Very good financial prospects

### G. Facebook usage

In this study, we examine the purposes of Facebook usage.

1. Do you use Facebook?      YES    NO (*if no, please continue to the next scale*)
  2. Please use the scale below (*ranging from 1 - very rarely to 5 - very often*) to assess **how often you use Facebook for the following purposes.**
- 

<b>I use Facebook to:</b>		<b>Very rarely</b>					<b>Very often</b>
		1	2	3	4	5	
<b>1</b>	Keep in touch with friends	1	2	3	4	5	
<b>2</b>	Reconnect with people I've lost contact	1	2	3	4	5	
<b>3</b>	Relieve boredom	1	2	3	4	5	
<b>4</b>	Organize or join events	1	2	3	4	5	
<b>5</b>	Join groups	1	2	3	4	5	
<b>6</b>	Present my opinions and beliefs (social, political, etc.)	1	2	3	4	5	
<b>7</b>	See what my friends do	1	2	3	4	5	
<b>8</b>	Inform other people what I do	1	2	3	4	5	
<b>9</b>	Post pictures and share pictures	1	2	3	4	5	
<b>10</b>	Write private messages	1	2	3	4	5	
<b>11</b>	Make new friends	1	2	3	4	5	
<b>12</b>	Date new people	1	2	3	4	5	
<b>13</b>	Look at the profiles of people I don't know	1	2	3	4	5	

### H. Immunology

The presented scales will help us to determine frequencies of various diseases in different countries. Additionally, we are interested in your attitudes towards illnesses. Please use the scale below (*ranging from 1 - strongly disagree to 7 - strongly agree*) to present your attitudes towards illnesses:.

---

**Strongly disagree**

**Strongly agree**

1	In general, I am very susceptible to colds, flu and other infectious diseases.	1	2	3	4	5	6	7
2	I am unlikely to catch a cold, flu or other illness, even if it is 'going around'.	1	2	3	4	5	6	7
3	If an illness is 'going around', I will get it.	1	2	3	4	5	6	7
4	My immune system protects me from most illnesses that other people get.	1	2	3	4	5	6	7
5	I am more likely than the people around me to catch an infectious disease.	1	2	3	4	5	6	7
6	My past experiences make me believe I am not likely to get sick even when my friends are sick.	1	2	3	4	5	6	7
7	I have a history of susceptibility to infectious disease.	1	2	3	4	5	6	7

Please mark how many times in your life you suffered from these diseases (*please circle one*):

<b>Dengue</b>	Never	Once	A few times
<b>Filaria</b>	Never	Once	A few times
<b>Leishmania</b>	Never	Once	A few times
<b>Leprosy</b>	Never	Once	A few times
<b>Malaria</b>	Never	Once	A few times
<b>Schistosoma</b>	Never	Once	A few times
<b>Trypanosoma</b>	Never	Once	A few times
<b>Tuberculosis</b>	Never	Once	A few times
<b>Typhus</b>	Never	Once	A few times

### I. Attitudes and opinions

Please mark whether you support the following phenomena. Please mark **YES** or **NO** for each statement.

<b>Death penalty</b>	YES	NO
<b>Multiculturalism</b>	YES	NO
<b>Stiffer jail terms</b>	YES	NO
<b>Voluntary euthanasia</b>	YES	NO
<b>Gay rights</b>	YES	NO
<b>Premarital virginity</b>	YES	NO
<b>New immigration to my country</b>	YES	NO
<b>Church authority</b>	YES	NO
<b>Legalised abortion</b>	YES	NO
<b>Legalised prostitution</b>	YES	NO



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