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NO REGRETS? A STUDY OF SEX SHAME, GUILT, AND EMBARRASSMENT

Lauren Castor

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NO REGRETS? A STUDY OF SEX SHAME, GUILT, AND EMBARRASSMENT

A Thesis
Presented to
the Faculty of the Department of Psychology
Murray State University
Murray, Kentucky

In Partial Fulfillment
of the Requirement for the Degree
of Master of Science

by Lauren Marie Castor
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Abstract

This study examines the relationship between sexual regret and shame, guilt, and embarrassment in college students. Specifically, the current study examined which emotion (shame, guilt, or embarrassment) was the biggest predictor of sexual regret through an online survey. The results showed that shame, guilt, and embarrassment were all highly correlated. However, the relationships between regret and guilt and shame were more powerful than the relationship between regret and embarrassment. The findings were unable to distinguish which emotion (e.g. shame, guilt, embarrassment) was the greater predictor of regret. However further support is provided that shows shame, guilt, embarrassment, and regret are all highly correlated.

Keywords: regret, shame, guilt, embarrassment

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Chapter I: Introduction

Hookups are defined as sexual acts between uncommitted individuals including, but not limited to, kissing, oral sex, or penetrative sex (Garcia, Reiber, Massey, & Merriwether, 2012). These hookups often occur without the idea of transitioning into a traditional romantic relationship (Garcia et al., 2012). As such, some individuals may feel regret about their sexual encounter following a hookup (Berntson, Hoffman, & Luff, 2014). For example, someone may feel regret about their choice in hookup partner, as well as the situation or setting in which the hookup occurred. Traditionally, we assume that regret results from feelings of guilt, shame, or embarrassment (Berntson et al., 2014). However, it is unclear which of these three emotions is truly to blame, or if one is more just more influential than the rest.

Although guilt, shame, and embarrassment are often used interchangeably, due to the perceived similarity of the emotions, their actual meanings and root causes are quite different (Tangney, 1990; Tangney, Mashek, & Stuewig, 2005). Guilt and shame are both rooted in a violation of one's moral code or values. On the other hand, guilt is more of a private experience, whereas shame is decidedly more public (Ausubel, 1955; Benedict, 1946). Embarrassment is similar to shame as it is more often produced in public situations, however it is less intense as it may be unrelated to one's moral values. Although general differences in these emotions have been studied previously, they are still often studied as synonyms and regret. The current research would examine these differences relevant to sexual experiences (Tangney, 1995). Specifically, this study focuses on the differences between guilt, shame, and embarrassment in the context of sex. More importantly, the current study will examine which of these emotions is more likely to cause feelings of sexual based regret.

Regret

Regret is a complicated emotion, which includes feelings of sorrow for something one did not do or wish that he or she had not done (Landman, 1987; Tangney, 1995; Kennair, Wyckoff, Asao, Buss, & Bendixen, 2018). An example of this could be a student experiencing feelings related to lack of preparation after not studying for an important exam and wishing that they had taken time to study for the test (Connolly & Zeelenberg, 2002). Experiencing regret has been associated with psychological distress, depression, stress, and anxiety (Grisanzio et al., 2018; Tangney et al., 2005). In fact, Roese (2009) found that regret was associated both with anxious arousal (i.e., feelings of stress, sweating, and racing heart), as well as anhedonic depression (i.e., numbness or inability to experience pleasure). Although individuals with anhedonia are usually fairly high functioning, these individuals are still experiencing significant distress (Grisanzio et al., 2018).

Past research has found that there are certain factors that predict regret (Towers, Williams, Hill, Philipp, & Flett, 2016). More specifically, they found that a person's inaction in a situation leads to higher levels of regret rather than action in situations. For example, not visiting a loved one in the hospital would result in more regret than visiting everyday while they were in the hospital. Additionally, people tend to feel less regret when they have a justification for their action or inaction.

Lastly, Towers et al. (2016) found that the life domain affected by the action or inaction can also change the intensity of the regret. Life domains are different areas of life that change throughout development (Towers et al., 2016). For example, a person might feel more intense regret if a person they were just fighting with dies before they get a chance to apologize, than if they were unable to study together for the last math quiz. Due to these natural variances in life

domains, or different events that could elicit feelings of regret, the current study focused on what causes regret more in the domain of casual sex (i.e., hookups) and how sexual regret relates to shame, guilt, and embarrassment.

Emotions Predicting Regret

Historically shame had not been studied independently from embarrassment (Tangney, 2005). Modern emotion research suggests that shame, guilt, and embarrassment should be studied as separate constructs as these feelings can be caused by a variety of different situations (Lewis, 1971; Lindsay-Hartz, 1984; Tangney, 1993; Tangney et al., 2005). Ausubel (1955) and Freud (1896, 1953) illustrated how these constructs were merely seen as the product of the differences between public vs private and internal vs external audiences. However, Tangney found that they are in fact, separate constructs (Tangney, 1990; Tangney, Miller, Flicker, & Barlow, 1996). Shame is a result of feeling exposed and involves a preoccupation with what other people may think about the bad behavior (Tangney, 1990). More specifically, Tangney (1990) wrote that shame is not so much focused on any particular behavior, but that it focused more on the entire person being analyzed and negatively appraised by others. According to Lewis (1971), shame involves a negative evaluation of the self, whereas guilt involves a specific thing or action against the self. Additionally, shame is a more public emotion as there is an element of exposure or feelings of an internal observer (Lewis, 1971). However, the word shame carries a more intense feeling than the word embarrassment, even though they both come from external sources. However, guilt has previously been investigated as having a more internal cause (Tangney, Miller, Flicker, & Barlow, 1996).

Tangney and colleagues (2005) conceptualized that shame and embarrassment were more closely related than shame and guilt. This could be due to differences in the events leading to the

experiences of the emotions. For example, if someone falls down in front of a large group of people, they may feel embarrassed. However, if someone caused another person to fall down in front of a group of people, they may experience feelings of shame due to causing a perceived harm to someone else. Likewise, someone might feel embarrassed if explicit photographs of them were distributed, but might feel shame instead if a sex tape depicting abnormal or fetishistic sexual behaviors was distributed. Embarrassment could be seen as coming from lesser moral transgressions as opposed to shame (Tangney et al., 2005).

Feelings of regret can also be impacted by public or private self-awareness (Tangney, 1990), which may help to explain why the emotions of shame, embarrassment, and guilt are often used interchangeably. Public versus private awareness of a perceived transgression ties into the differences between embarrassment and shame. Public self-awareness, which relates to feelings of embarrassment, pertains to feelings of exposure in addition to worries about being judged by others. Private self-awareness, which relates to shame, is heavily reliant on a person's view of themselves, as well as how they evaluate themselves (Tangney, 2005). Initially, Izard (1977) surmised that embarrassment could be conceptualized as an element of shame. However, later studies (Borg, 1998; Buss, 1980) found that embarrassment is less intense than shame.

Guilt and shame have been differentiated by saying that "...guilt is thought to be the reaction of one's internalized conscience to a breach of one's personal standards..." (Tangney et al., 1990, p. 1256). Guilt has also been conceptualized differently as it created more of a sense of wrongdoing rather than the person being wrong at the core of their being, as well as leading to mindsets that can include more remorse or regret (Lewis, 1971). This reinforces the argument that although shame is a publicly experienced emotion, guilt is one that is experienced more privately.

In the end, which of these emotions is the greatest predictor of regret is still unknown. Much of previous research has been focused on showing that there is a relationship between these negative emotions as a whole (guilt + shame + embarrassment) on regret. However, no one has examined which of these three negative emotions more highly predicts regret. Hence, the current study's goal is to discern which emotion predicts higher levels of regret with regards to sexual experiences. Because of the similarity in the perception of guilt, shame, and embarrassment, some overlap is expected as they are all "negative" emotions. These interrelations can be seen when differentiating between public and private awareness as well as feelings of exposure (Tangney, 2005).

Hookup Culture in College Samples

Hookups are sexual acts between consenting, uncommitted individuals and includes but is not limited to kissing, oral sex, and penetrative sex (Garcia et al., 2012). Over the years, hookup culture has become a topic of interest across many college campuses (Berntson, Hoffman, & Luff, 2014). Data suggests that in 2000, between 60% and 80% of college students engaged in hookups (Arnett, 2000; Garcia et al., 2012). One could reason that hookup culture is common is because it is supported by the media in their glamorization of casual sex and other sexual content (Berntson et al., 2014). Other reasons for an increase in the popularity of hookup culture could include people getting married later in life, in addition to sex before marriage becoming more widely accepted (Berntson et al., 2014). Another study sampling from undergraduates living on campus found that approximately 78% of students reported engaging in hookups (Paul, McManus, & Hayes, 2000). A recent study examining the prevalence of hookups in female college freshmen found that 60% of participants reported at least one hookup by the end of their first semester (Fielder & Carey, 2010a). Other studies have found upwards of 80% of

participants, which were college students, reporting engaging in hookups (Fielder & Carey, 2010b).

Because of the high likelihood of young adults becoming sexually active, there is a fairly common debate about the way sexual education should be taught (Walcott, Chenneville, & Tarquini, 2011; Furstenburg, Moore, & Peterson, 1985). Some argue sexual education should be taught as from an abstinence only perspective, while others urge that sexual education should include comprehensive information about sex and possible consequences. However, Walcott et al. (2011) stated that results have shown that abstinence-only sexual education programs are no more effective in achieving the goal of students abstaining from sexual activity than comprehensive or general health sexual education courses (Trenholm, Devaney, Fortson, Clark, Quay, & Wheeler, 2008; Underhill, Montgomery, & Operario, 2007). This was supported by research conducted by Furstenburg et al. (1985) which found that sexual education at school did not necessarily undermine what parents were teaching at home, but rather served to supplement that information. Knowledge of methods of protection and contraception gained through sexual education have been thought to help prevent perceived negative consequences.

Engaging in hookups can have perceived negative consequences. Although rare due to the availability of contraceptives, unintended pregnancies can result from hookups involving sexual intercourse (Fielder & Carey, 2010b). There has also been an increase in the rates of sexually transmitted infections (STIs) on college campuses (Kovacs, 2016). In 2015, the Centers for Disease Control and Prevention (CDC) reported over 1.5 million cases of chlamydia and almost 400,000 cases of gonorrhea, with the most reported cases occurring in individuals between the ages of 15 and 24 (Kovacs, 2016). Sexual education programs serve to disseminate information about these possible consequences of misuse or nonuse of things like protection and

contraception. There is a fairly common debate about the way sexual education should be taught (Walcott, Chenneville, & Tarquini, 2011; Furstenburg, Moore, & Peterson, 1985). Some say that sexual education should be taught in an abstinence only curriculum (Furstenburg et al., 1985), while others say that individuals should be given instruction about safe sex practices, and that any sexual education is better than none at all (Walcott et al., 2011). This is relevant because the knowledge imparted on individuals in sexual education courses is carried forward through life and sometimes on to college.

Some studies have found that individuals who have engaged in hookups may feel guilt at a later time (Fielder & Carey, 2010b). For example, one study found that 72% of students who were sexually active experienced regret in at least one of their sexual experiences (Oswalt, Cameron, & Koob, 2005). Other studies found that hookups may be one of the most common sources of sexual regret (Morrison & Roese, 2011). Some studies have even found that hookups could be a contributing factor of anxiety, stress, and depression in college students (Wade, 2019).

Due to the prevalence of hookups on college campuses and the high stakes nature of sex (due to the aforementioned possible negative consequences), studying regret as it pertains to hookups is beneficial. The increasing trend of popularity in hookup culture and the possible emotional implications of regret, guilt, shame, and embarrassment that could be associated with hookups make it important to study how these factors can impact one another. The goal of this research is to study the differences between guilt, shame, embarrassment and regret as a result of casual sex behaviors. Sex is the topic of particular interest in the study due to the relevance and modern-day hookup culture on college campuses, as this is a particularly salient behavior for them (Berntson et al., 2013).

Chapter II: The Current Study

The purpose of the current study is to examine which of three negative emotions (i.e., shame, guilt, and embarrassment) is the biggest predictor of sexual regret. The current study will be exploring the predictive influence of shame, guilt, and embarrassment on regret in Murray State University students.

Hypotheses and Research Questions

H1. Based upon prior work (Tangney, 1990), it is expected that ratings of guilt, shame, and embarrassment will be interrelated, as well as positively related to regret.

Additionally, the current study will examine which of the three emotions weighs heavier in instances of regret. Thus, the following research questions were created:

RQ1. Which of the emotions (i.e., guilt, shame, and embarrassment) is the better predictor of sexual regret?

RQ2. Does sex or sexual orientation of the participant play a role in the relationship between regret and the emotions?

Chapter III: Methods

Participants

A priori power analysis (statskingdom.com) indicated that 150 participants provide adequate power at .80 with a small effect size for all of the appropriate analyses. Participants were students recruited from Murray State University that were enrolled in psychology courses. The students were recruited through SONA-Systems, an online data management system maintained by the psychology department.

A total of 95 participants initially completed the survey, however 17 participants did not follow recruitment instructions and indicated that they were not sexually active. Therefore, their data was removed prior to analysis, leaving 78 participants remaining. Of the 78 participants, there were 63 females (79.7%), 15 males (19.2%), and 1 unreported (0.01%). Murray State University reported that their student body is 62.33% female and 37.68% male (Mission & Quick Facts). Participant ages ranged from 18 to 23 years ($M = 19.27$, $SD = 1.40$). Additionally, there were 53 freshmen (67%), 10 sophomores (12.8%), 5 juniors (6%), and 10 seniors (12.8%). Of the 78 participants, only one reported receiving no sexual education, whereas all other participants reported having undergone sexual education either at school, at church, or at home. Participants reported an average of 6.26 sexual partners in their lifetime and an average of 3.69 sexual partners in the past year. When asked questions about sexual education, the participants reported between no sexual education and the maximum amount of sexual education ($M = 8.41$, $SD = 2.89$).

Materials and Measures

This study was listed on Murray State's SONA-Systems website, under the headline of "Sexual Interactions and Emotions" and had a small description. The description informed

participants that the study would contain an anonymous survey, and would ask questions of a personal nature and that they must be or have been sexually active. Sexually active was defined as kissing, making out, sexual touching, or intercourse. If participants chose the study, they were prompted to read an online informed consent form that explained the study in more details.

Upon consent, participants were directed to a survey that first reminded the participant that their information is completely anonymous and that they may withdraw from the study at any time. Then, in order to get people to think about a specific regrettable instance, they were asked to write a short essay. Participants read the following essay prompt (Appendix A). “Think of the most recent time you willingly engaged in a sexual hookup (for example kissing, making out, casual sex), but regretted it later. Please write about that sexual experience in as much detail as possible.”

After completing the essay, participants completed the following measures:

Regret Elements Scale (RES; Buchanan, Summerville, Reb, & Lehmann, 2016; Appendix B). The RES uses 10 questions divided into two categories (affective and cognitive) to measure regret. An example of an affective question is “I am experiencing self-blame.” An example of a cognitive question is “I wish I had made a different decision.” These questions are answered on a seven-point Likert scale ranging from 1(*strongly disagree*) to 7(*strongly agree*). The cognitive subscale’s ($\alpha = .87$) and the affective subscale’s ($\alpha = .89$) were found reliable in past samples (Buchanan et al., 2016). Reliability coefficients for the cognitive subscale ($\alpha = .96$) and the affective subscale ($\alpha = .94$) also indicate the current sample is reliable. RES has also shown adequate validity in past studies. For example, the affective and cognitive subscales are correlated in past studies, $r(76) = 0.80, p < .001$, and were also correlated in the current study ($r(78) = .80, p < .001$). Buchanan et al. (2016) demonstrated convergent validity ($r_s > 0.63, p_s <$

.001) and discussed the discriminant validity via a lack of relationship with need for cognition ($r_s < 0.13, p_s > .25$), faith in intuition ($r_s < 0.12, p_s > .29$), and neuroticism ($r_s < 0.12, p_s > .30$). It was decided that as the two subscales are so highly correlated that the current study would analyze a total regret score, rather than exploring the two subscales separately.

Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988; Appendix C). The PANAS measures levels of intensity of 22 varying emotions (Appendix C) divided into two subcategories: positive and negative. These emotions include, but are not limited to, positive emotions (e.g., excited, inspired, proud) and negative emotions (e.g., ashamed, irritable, distressed). Of particular interest to the current study is the ratings for the items of guilt, ashamed, embarrassment, and regret. The emotions of embarrassment and regret were added to the existing measure as they were not contained in the original version. Embarrassment was added in order to present all three emotions of interest in the measure and regret was added as a manipulation check to compare with the Regret Elements Scale as the current study is not using the measure as a whole. Participants were asked to consider the emotions with regards to the behavior in their essay. Participants will be asked to rate how much they are feeling each emotion after their reported sex experience on a 5-point Likert scale ranging from 1(*not at all*) to 5(*extremely*). As reported by Watson and colleagues (1988), the PANAS Cronbach alpha coefficient for the positive affect scale was between 0.86 and 0.90. The negative affect scale Cronbach alpha was between 0.84 and 0.87. In the current study, the positive affect subscale's ($\alpha = .91$) and the negative affect subscale's ($\alpha = .88$) indicating that the scores in the current sample are reliable. Watson (1988) also reported test-retest correlations between 0.47 and 0.86 for the positive affect scale and between 0.39 and 0.71 for the negative affect scale (DePaoli & Sweeney, 2000; Watson et al., 1988). Additionally, the positive and

negative affect scales ranged in correlation from -.12 to -.23 which indicated that the two scales were independent (DePaoli & Sweeney, 2000; Watson et al., 1988). In the current study, the correlation found between the positive and negative affect scales was $r(78) = -.12, p = .278$. This means that the current study did not show any significant correlation between the positive and negative affect scales. However, the current study is not utilizing the PANAS as a whole, it is only using the data from “guilty” and “ashamed” along with the added emotions of “regretful” and “embarrassed.” The four emotions were analyzed with a Cronbach alpha ($\alpha = .91$) and found to be reliable, as well as correlated ($p < .001$).

Demographics (Appendix D). Basic questions about demographics such as age, sex, year in school, whether or not they are sexually active, how many sexual partners they have had, religiosity, and questions about sexual education were asked. The purpose of these questions was to describe the participants, as well as examine whether any demographic variables were potential covariates. Additionally, participants were asked to describe their sexual orientation in an open-ended question so as to account for answers along the LGBTQIA+ spectrum. However, as the researcher gave no explanation of the meaning of sexual orientation to participants, the answers that were provided were unable to be used due to misunderstandings of the question. These misunderstandings are evidenced by answers such as “male” or “female” when asked about participant sexual orientation.

Sexual Education (Appendix E). Embedded in the demographics section, 13 questions that queried the amount of sexual education one received (e.g., Have you ever received formal education through your school) were added. Each question was coded (Yes = 1; No = 0; I don’t know = 0) in order to ascertain the amount of sexual education the participants had received. The answers were summed, meaning that the sexual education score could range from 0 to 13. These

questions were taken from an unpublished research paper for the sole purpose of describing the amount of sexual education participants had been exposed to at the time of the survey.

The entirety of the study was completed within 15 minutes. Upon completion of survey, participants were offered a short debriefing statement and the opportunity to receive more information about the study upon its completion.

Chapter IV: Results

After the data was cleaned and ready for analysis, the researcher conducted preliminary analyses to ascertain frequencies, means, and standard deviations of the variables, as well as assess for normality. All variables were normal; however, two demographic variables were skewed. Participant sex was found to be predominantly female, and year in school which was predominantly freshmen.

To examine whether the variables were highly correlated, a series of Pearson's bivariate correlations were conducted using the scores from each of the relevant emotions on the PANAS as well as for each sex. As expected, the Regret Elements Scale (RES; Buchanan et al., 2016) was highly correlated with the feelings of "guilty, ashamed, embarrassed, and regretful" from the PANAS. The correlation between the RES and regretful from the PANAS was used as a manipulation check which was successful.

Table 1. *Intercorrelations between Potential Predictors of Regret.*

	Age	Sex	Year	Relig.	Sex Ed	RES Tot	Guilty	Ashamed	Embarrassed
Age	--	-.12	.86***	-.27*	-.11	.01	-.03	-.16	.09
Sex ¹		--	-.13	-.07	-.02	.01	.01	-.02	-.02
Year ²			--	-.20	-.10	.03	.07	-.04	.12
Religiosity				--	.06	.05	.16	.03	.07
Sex Ed					--	.05	.05	.05	-.04
Regret						--	.80***	.80***	.72***
Guilty							--	.81***	.76***
Ashamed								--	.68***
Embarrassed									--
<i>M(SD)</i>						35.11(18.42)	2.56(1.38)	2.46(1.46)	2.66(1.44)

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

Note¹: Sex was coded as (male = 0; female = 1)

Note²: Year was coded as (freshman = 1; sophomore = 2; junior = 3; senior = 4)

The first research question focused on determining which of the emotions (i.e., shame, guilt, and embarrassment) would be the higher predictor of sexual regret. As it was expected that the three variables would be highly correlated with one another (evidenced by $r_s > .68$), three

separate linear regressions were conducted to compare the predictive nature of each of the three emotions on regret. Results indicated that each emotion was a significant predictor of regret, and all had great influence. However, the emotion of ashamed, which is the same in this study as the aforementioned “shame” but was changed to match the language of the PANAS, was the largest as it accounted for more variance in regret than the remaining two emotions of guilty and embarrassed.

Table 2. *Analysis of Predictors of Regret.*

Predictors	β (SE)	Model Statistics	R^2
Guilty	.91(.80)***	$F_{(1, 77)} = 136.85$ ***	.64
Ashamed	.86(.80)***	$F_{(1, 77)} = 138.09$ ***	.65
Embarrassed	1.04(.72)***	$F_{(1, 76)} = 79.28$ ***	.51

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Hierarchical multiple regression analyses were attempted which would have allowed an examination of which emotion had the heaviest influence while controlling for the others on regret. An examination of the model fit increases from one step to the second step, indicated that none of these analyses showed significant improvement. That is, there was no emotion that improved the model over the other two emotions. Therefore, results from this analysis are not reported here. Additionally, these results may be invalid and unreliable due to severe multicollinearity issues. Specifically, all tolerance values were below .5 and all VIF values were above 2. Paul (2006) stated that tolerance values below .5 and VIF values above 2 demonstrate that a sample is too unstable to produce reliable results.

The second research question focused on exploring whether the effects sex or sexual orientation of the participants may play on the relationships between regret and the emotions.

However, as sex was highly skewed toward females due to the lack of male participants the analysis was not conducted. Additionally, due to the aforementioned inability (see demographics section of methods) to interpret the question about sexual orientation, the analysis using this variable was also not conducted. Thus, the answer to research question two was unable to be investigated at this time, but could be investigated in future research.

Chapter V: Discussion

This study explored the differences in shame, guilt, and embarrassment in relation to regret and which emotion (i.e. shame, guilt, embarrassment) could better predict regret. The first analyses were run to assess for any correlations between the variables. As expected, regret was highly correlated with the feelings of guilt, shame, embarrassment. However, guilt and shame were found to be more powerful than embarrassment at predicting regret. This is congruent with previous research stating that shame and guilt are more intense emotions and that embarrassment is fairly fleeting in comparison (Borg, 1998; Buss, 1980; Izard, 2001; Lewis, 1971; Tangney, 1990; Tangney et al., 1996; Tangney et al., 2005).

Additionally, the study attempted to investigate whether the sex or sexual orientation of the participants could play a role in the relationships between regret and the emotions. However, this analysis could not be conducted because sex was not correlated with any of the variables. However, it is possible that this lack of correlation is due to the sample being predominantly female. Additionally, because there were misunderstandings around the question about sexual orientation, the analysis was not calculated. Future researchers should attempt to get a more equalized sample because past research has found evidence of sex differences in the experience of these emotions (Berntson et al., 2014; Borg et al., 1998; Kennair et al., 2018; Morrison & Roese, 2011; Tangney, 1990; Tangney et al., 1996; Tangney et al., 2005).

Other individual differences were also explored in the study. However, none of them were correlated with the variables either. For example, neither religiosity nor amount of sexual education was correlated with regret nor any of the selected emotions. Future studies should strive to gather a larger sample in order to investigate cultural factors like religiosity, age, or sexual education as these factors could change based on where the sample is gathered. For

example, higher levels of religiosity made indicate stronger presence of regret, shame, guilt, or embarrassment. Likewise, age may impact these emotions as well. Specifically, these emotions may decrease as age increases.

Recent research has shown that there are differences between shame, guilt, and embarrassment, and that these three emotions should be studied independently. However, the current study indicates whatever differences there may be, these differences are small. The current research showed that although shame, guilt, and embarrassment all correlated with regret, they are also highly correlated with each other. In fact, they were more correlated with one another than with the dependent variable of regret. Furthermore, the multicollinearity issues made attempts to distinguish between shame, guilt, and embarrassment impossible. These differences between regret, shame, guilt, and embarrassment might only be important in a clinical setting. Perhaps research should shift focus from studying these emotions independently and focus more on when two, three or more of the emotions are present. Future research should continue to disentangle the impact these emotions may have both independently and in conjunction with each other and other related variables.

This research had several limitations. First, the population was almost entirely female which could have impacted any analysis conducted with participant sex. As mentioned before, Murray State University's undergraduate student population has an almost 60% female and 40% male split (Mission & Quick Facts). However, my study's population was nearly 80% female, which made trying to look at sex differences extremely difficult.

Beyond the limited demographic variability in the sample, there were simply not enough participants in this study. An a priori power analysis revealed that the study required 150 participants in order to have adequate power. However, due to the timing of the study (congruent

with a pandemic that ended the school year early), the current study did not collect enough data. Importantly, due to the potentially low power in this study, a type II error could be occurring. A power analysis with Stats Kingdom was conducted to assess current power which was .76. That is, that the hypothesis that shame, guilt, and embarrassment are different could actually be true but was not investigated at this time due to multicollinearity issues.

Third, as this research is based solely on self-report measures, participants could have let personal biases influence their answers due to the socially desirable response bias. This occurs when participants respond to survey questions in a way that presents themselves in a favorable manner. The socially desirable response bias can impact results by either creating or hiding relationships between variables (Van de Mortel, 2008). For example, this could have occurred when participants were asked to write about a regretful sexual experience. They may have tried to soften their negativity toward the event, or even their description of the event, in order to look more socially desirable or reduce any cognitive dissonance they may have felt about engaging in a behavior that they subsequently regret.

Moreover, it is unclear that participants even understand the difference between these emotions. While scientifically it could be important, participants may have been conflating or confusing the emotions. Based on previous research (Tangney et al., 2005) participants in previous studies were not always able to tell the difference between the emotions. In order to remedy this, future studies may want to include a more robust way to measure the different emotions, such as including a definition of the emotion with the self-report measure, or checking participant's understanding via a quiz.

Lastly, because the research was performed through a convenience sample with college students, it may not be generalizable to other populations. As this research was conducted at a

mid-sized university in a rural midwestern area, the results may not be able to be generalized to other geographical areas (Peterson & Merunka, 2014). The fact that this research comes from a mid-sized university in a rural area make the results less generalizable because value and viewpoints may be place on different ideals based on geographical location and population.

Learning more about the differences between emotions like shame, guilt, and embarrassment and how they can lead to regret is integral to better understanding human emotions. Although this research was unable to show large differences between shame, guilt, and embarrassment, this research did support that these three emotions are all highly correlated with feelings of regret. While the writing samples were not coded for analysis, there were several trends in responses. Some participants reported that they did not experience any regret while other participants reported that they regretted a sexual encounter because they were “too young,” “on the rebound,” they had been “drinking alcohol”, or that it was their “first time”. Knowledge of shame, guilt, embarrassment, and regret could help university students to better understand and interpret their emotions accurately with regards to hook up culture on college campuses.

Appendix A: Essay Prompt

Think of the most recent time you willingly engaged in a sexual hookup (for example kissing, making out, casual sex), but regretted it later. Please write about that sexual experience in as much detail as possible.

Appendix B: Regret Elements Scale

Think about each of the following items, in regards to the sexual behavior your just wrote about.

Please rate your level of agreement with these statements from:

	1	2	3	4	5	6	7
	1(strongly disagree)						7(strongly agree)
I am experiencing self-blame about the way I made my decision	1	2	3	4	5	6	7
I feel sorry	1	2	3	4	5	6	7
I am experiencing self-blame	1	2	3	4	5	6	7
I feel guilty	1	2	3	4	5	6	7
I feel like kicking myself	1	2	3	4	5	6	7
Things would have gone better if I had chosen another option	1	2	3	4	5	6	7
I wish I had made a different decision	1	2	3	4	5	6	7
I should have decided differently	1	2	3	4	5	6	7
I would have been better off had I decided differently	1	2	3	4	5	6	7
Before I should have chosen differently	1	2	3	4	5	6	7

Appendix C: PANAS – GEN

This scale consists of a number of words that describe different feelings and emotions. Think about each of the following items, in regards to the sexual behavior you just wrote about. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way with regards to your behavior.

Use the following scale to record your answers.

	Very Slightly or Not at All	A Little	Moderately	Quite a Bit	Extremely
Interested					
Distressed					
Excited					
Upset					
Strong					
Guilty					
Scared					
Hostile					
Enthusiastic					
Proud					
Irritable					
Alert					
Ashamed					
Inspired					
Nervous					
Determined					
Attentive					
Jittery					
Regret					
Active					
Embarrassed					
Afraid					

Appendix D: Demographics

What year are you in college?

- Freshman
- Sophomore
- Junior
- Senior
- Non-degree Seeking

What was your biological sex at birth? Male Female

What is your sexual orientation? _____

What is your age? _____

What is your ethnicity? _____

Are you sexually active? Yes No

How many different sexual partners have you had in your lifetime? _____

How many different sexual partners have you had in the past year? _____

Appendix E: Sexual Education Questions

Have you ever received any formal instruction at school, church, a community center, or some other place about how to say no to sex?

Yes No I don't know

Have you ever received any formal instruction at school, church, a community center, or some other place about birth control?

Yes No I don't know

Have you ever received any formal instruction at school, church, a community center, or some other place about sexual disease prevention?

Yes No I don't know

Have you ever received any formal instruction at school, church, a community center, or some other place about sexual anatomy?

Yes No I don't know

Have you ever received any formal instruction at school, church, a community center, or some other place about sexual practices and behaviors?

Yes No I don't know

Have you ever received any formal instruction at school, church, a community center, or some other place about abstinence (i.e., avoiding sex) only?

Yes No I don't know

Have you taken a college class about human sexuality?

Yes No I don't know

Have you ever received any instruction from your parents about how to say no to sex?

Yes No I don't know

Have you ever received any instruction from your parents about birth control?

Yes No I don't know

Have you ever received any instruction from your parents about sexual disease prevention?

Yes No I don't know

Have you ever received any instruction from your parents about sexual anatomy?

Yes No I don't know

Have you ever received any instruction from your parents about sexual practices and behaviors?

Yes No I don't know

Have you ever received instruction from your parents about abstinence (i.e., avoiding sex) only?

Yes No I don't know

Appendix F: IRB Approval



Institutional Review Board

328 Wells Hall
Murray, KY 42071-3318
270-809-2916 • msu.ibr@murraystate.edu

TO: Jana Hackathorn, Psychology

FROM: Jonathan Baskin, IRB Coordinator *JB*

DATE: 3/13/2020

RE: Human Subjects Protocol I.D. – IRB # 20-187

The IRB has completed its review of your student's Level 1 protocol entitled *Sex Experiences and Affect*. After review and consideration, the IRB has determined that the research, as described in the protocol form, will be conducted in compliance with Murray State University guidelines for the protection of human participants.

The forms and materials that have been approved for use in this research study are attached to the email containing this letter. These are the forms and materials that must be presented to the subjects. Use of any process or forms other than those approved by the IRB will be considered misconduct in research as stated in the MSU IRB Procedures and Guidelines section 20.3.

Your stated data collection period is from 3/13/2020 to 3/12/2021.

If data collection extends beyond this period, please submit an Amendment to an Approved Protocol form detailing the new data collection period and the reason for the change.

This Level 1 approval is valid until 3/12/2021.

If data collection and analysis extends beyond this date, the research project must be reviewed as a continuation project by the IRB prior to the end of the approval period, 3/12/2021. You must reapply for IRB approval by submitting a Project Update and Closure form (available at murraystate.edu/ibr). You must allow ample time for IRB processing and decision prior to your expiration date, or your research must stop until such time that IRB approval is received. If the research project is completed by the end of the approval period, then a Project Update and Closure form must be submitted for IRB review so that your protocol may be closed. It is your responsibility to submit the appropriate paperwork in a timely manner.

The protocol is approved. You may begin data collection now.

**Opportunity
afforded**

murraystate.edu

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