

SCHADENFREUDE AS A MATE VALUE TRACKING MECHANISM WITHIN SAME-SEX
FRIENDSHIPS

Leisha A. Colyn

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Committee:

Anne K. Gordon, Advisor

Harold Rosenberg

Howard Casey Cromwell

ABSTRACT

Anne K. Gordon, Advisor

Friends provide many benefits. However, same-sex friends may also compete with us for mates. *Schadenfreude* is the feeling of pleasure that occurs when another person experiences a misfortune. I view schadenfreude as a psychological mechanism designed to help us deal with the problems associated with intrasexual competition. In this research, I focus on competition between same-sex friends. Participants described a time when they experienced schadenfreude toward a same-sex or opposite-sex friend and completed a survey regarding schadenfreude in friendships. The primary hypothesis was that schadenfreude would be elicited within same-sex friendships by events that lowered one's friends' mate value. Results showed that schadenfreude is ubiquitous within college students' friendships. The most common themes present in participants' narrative accounts were competition within work, sports, and academic contexts, justice restoration, and misfortunes that occurred after a friend had rejected or betrayed the participant. Schadenfreude does appear to track physical attractiveness among women. However, schadenfreude does not appear to track status for men. The Discussion focuses on the ubiquitous nature of schadenfreude within friendships, highlighting a potential dark side of friendship.

I dedicate this work to my family for their unwavering support through all of my academic pursuits.

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INTRODUCTION

Schadenfreude refers to the feeling of pleasure that is experienced at another's misfortune (Feather, 1989). It is often referred to as malicious joy or malicious pleasure and involves experiencing a small amount of pleasure when another person experiences an unfavorable event (Heider, 1958). For example, one might feel a small sense of pleasure when an arrogant co-worker makes a mistake in a presentation at work.¹ In this paper, I conceptualize *schadenfreude* as the pleasure experienced when someone else experiences a failure, setback, or does not achieve a desired goal or outcome.

To date, the research on *schadenfreude* is fairly scarce. Research on *schadenfreude* stemmed from research conducted by Feather (1989) on the fall of high achievers, who he referred to as tall poppies. He was interested in what people feel when high achievers experience a setback as opposed to when average people experience a setback. Feather's (1989) participants reported that they would be happier about a high achiever's fall than a low achiever's fall (Study 1) and if a high- versus low-achieving student was caught cheating (Study 2). In several additional experimental studies, Feather found that reactions to the fall of tall poppies depend on a variety of variables, including perceived causes of the success and failure of the tall poppy (e.g., cheating or working hard to gain success), judgments about the tall poppy's deservingness, the domain in which the fall occurs (e.g., sports or politics), and whether the fall is extreme or puts the poppy on an equal plane with most others (Feather, 1994). Feather has concluded that people are more likely to experience *schadenfreude* if tall poppies are perceived as being undeserving of the high status and/or use the status in a negative way (a "bad" tall poppy). Additionally, people are more likely to experience *schadenfreude* when the fall is from a scandalous event and brings the tall poppy down to the level of the general population.

SCHADENFREUDE AND ENVY

Most of the research on schadenfreude focuses on its relationship to envy, which Smith et al. (1996) define as the negative emotion that occurs when one desires something that another person has. It has been proposed that schadenfreude results from envy. In support of this notion, Smith et al. demonstrated that envy and schadenfreude are causally linked. Undergraduate participants in this study watched a video of either an average male student or a highly successful male student who was preparing to apply to medical school. The superiority of the student in the video served as the manipulation of envy. It was assumed that the highly successful student would elicit more envy from participants than the average student. The student in the video was subsequently charged with stealing amphetamines from the lab where he worked. Participants then completed a questionnaire containing items regarding how they felt toward the actor after the actor suffered the misfortune (e.g., “delighted because of how things have turned out for the student since the interview”). Results indicated that the episodic envy created in participants enhanced the likelihood that they would feel schadenfreude at the student’s setback.²

In discussing their results, Smith et al. (1996) suggested that a misfortune that befalls a competitor often leads to a direct gain to another and, therefore, may cause the benefactor to experience schadenfreude. In the current research, I will argue that friends, same-sex friends in particular, are often in direct or indirect competition with each other for mates and, therefore, are expected to experience schadenfreude when a friend experiences a misfortune, failure, or setback related to his or her mate value.

In this research I am taking an evolutionary approach toward understanding the role of schadenfreude within friendships. On the following pages, I provide a brief introduction to evolutionary psychology with a focus on parental investment theory, intersexual selection, and

intrasexual competition and make predictions regarding specific contexts that will elicit schadenfreude within same-sex friendships.

EVOLUTIONARY PSYCHOLOGY

Evolutionary psychology takes a functional approach toward understanding the evolved psychological mechanisms of the mind. In doing so, evolutionary psychology applies the theories of natural and sexual selection to the study of the human mind. I will briefly describe these processes and how they relate to the current study.

Natural selection explains how different mechanisms that are related to survival or mating developed over evolutionary history. Organisms vary on many different characteristics, including such things as wing span, fighting ability, and social cunning. These characteristics may be inherited by offspring and passed on through several generations. Organisms pass on to their offspring the inheritable characteristics that help them to survive or more successfully reproduce. Those who did not have these particular beneficial characteristics did not survive to produce offspring, or produced fewer than those with the beneficial characteristics.

Sexual selection focuses on the development of traits that are associated specifically with successful mating, relative to other adaptations (Buss, 2004). Sexual selection occurs when a trait, such as physical attractiveness, provides an advantage in reproductive success (Kenrick & Trost, 2004). Sexual selection occurs through the processes of intersexual selection and intrasexual competition, which are distinct yet conceptually related (Darwin, 1871). Intersexual selection refers to the notion that, for example, men prefer certain traits in women. Therefore, women who possess these traits will have an advantage relative to other women in terms of being chosen as mates. Through intersexual selection, traits such as physical attractiveness (specifically, the genes associated with the traits) gain an advantage relative to other traits

because they are effective in attracting members of the other sex. Intrasexual competition occurs when people of the same sex compete with each other for mates. Through intrasexual competition, physical attractiveness, for example, gains advantage because it allows one to out-compete same-sex rivals for mates (Kenrick & Trost, 2004). In the following pages, I will discuss these two components of sexual selection in more detail.

PARENTAL INVESTMENT THEORY AND INTERSEXUAL SELECTION

Over evolutionary history, men and women have faced some similar adaptive problems, such as those related to survival. However, in contexts of mating, men and women often faced different adaptive problems. According to Parental Investment Theory (Trivers, 1972), the sex that invests more in offspring will be more selective in mate choices, and the sex that invests less will compete more for access to the more selective sex. In humans, women invest more in offspring than men. Women experience internal gestation for nine months and often breast feed for several additional months after birth, whereas men's investment can, and often does, end after insemination. Because women invest more biological resources in offspring than men, they have had to solve the problems of identifying and attracting a man who had the ability and willingness to commit and provide resources to the woman and her offspring. Under ancestral conditions, the offspring of women who did not have a committed man to provide protection and food would not fare well in terms of health and survival. Mate selection pressures are exerted by both men and women. However, because the adaptive problems men and women faced were different over evolutionary history (see Buss & Schmitt, 1993), different psychological mechanisms have developed for men than women.

One of the primary problems that women must solve in pursuing a long-term relationship is that of identifying men who are willing and able to invest his resources and protect them and

their offspring. According to Sexual Strategies Theory (Buss & Schmitt, 1993) women's mate preferences for long-term partners evolved, in part, to solve the problems of identifying men who are able and willing to provide resources and protection. Women's mate preferences emphasize cues to a man's ability and willingness to invest resources, such as ambition, earning capacity, and professional degrees (Buss, 1988; Buss & Schmitt, 1993). Even though resources can be directly observed, many times people choose to mate before access to these resources has fully developed. In this case, women rely on cues to infer later ability or willingness to provide resources (Buss, 1992). Willerman (1979) found that the two best known predictors of economic success are sheer hard work and intelligence. Today, women tend to prefer men with ambition, greater physical strength, and social dominance because these preferences benefited their ancestors over evolutionary history (Buss & Schmitt, 1993).

One of the primary problems that men must solve in pursuing a long-term relationship is that of identifying reproductively capable women. According to Sexual Strategies Theory (Buss & Schmitt, 1993) men's mate preferences for short-term and long-term partners evolved, in part, to solve the problem of identifying fertile women. Because reproductive capability is not directly observable, men must rely on cues to determine the reproductive capability of a woman. These cues include age (Williams, 1975; Symons, 1979), a low waist-to-hip ratio (.7; Singh, 1993), clear skin, lustrous hair, white teeth, and high energy. Overall, physical attractiveness is related to fertility (Symons, 1995). Today, men tend to prefer young and physically attractive women because these preferences benefited their ancestors over evolutionary history (Buss & Schmitt, 1993).

Ample evidence supports these theoretically predicted sex differences in mate preferences. Most convincingly, Buss (1989) surveyed 10,047 people from 33 different countries

(e.g., Australia, France, Iran, and Nigeria) about their preferences for a long-term mate. In 36 of the 37 samples, women valued mates who are a good financial prospect significantly more than men. In 34 of the samples men valued physical attractiveness in their mates significantly more than women (and the results were in the same direction for the remaining three samples).³

Many other researchers have found similar results. Wiederman and Allgeier (1992) found that, among both college students and adult community members, men placed more emphasis on good looks in a partner than women, who, in turn, placed more value on the good financial prospect of a partner than men. In studies on personals advertisements men mention their high incomes and seek physical attractiveness from potential partners. Conversely, women tend to mention their physical attractiveness and seek resources (see Feingold, 1992; Greenlees & McGrew, 1994; Thiessen, Young, & Burroughs, 1993). In several studies, Li, Bailey, Kenrick, and Linsenmeier (2002) found that men consider a woman's physical attractiveness a necessity, meaning that they require that women meet a certain level of attractiveness before they will consider any other of her traits. Similarly, women consider a man's social status and resources a necessity, and require that men meet a certain level of status before they will consider any other of his traits. When given the opportunity to learn more about a potential partner, physical attractiveness is the first thing men chose to learn about, and social status is the first thing women chose to learn about the potential partners (Li et al., Study 3). Moving beyond reported preferences to behavior, several studies have shown that attractive women tend to marry men with high occupational status (e.g., Taylor & Glenn, 1976; Udry & Eckland, 1984).

Thus, sexual selection has favored men (and their psychological mechanisms) who preferred to mate with reproductively capable and physically attractive women. Sexual selection

has favored women (and their psychological mechanisms) who preferred to mate with men who provided resources.

INTRASEXUAL COMPETITION

For the purposes of the current research, it is important to note that mate selection criteria and mate preferences shape the dimensions on which men and women compete with their same-sex rivals (Darwin, 1871; Trivers, 1972). Buss (1992) expected men to compete with one another by displaying or pretending to have the qualities that women look for in partners and women to compete with one another by displaying or pretending to have the qualities that men look for in partners. In support of this hypothesis, when asked to report what they do to attract members of the opposite sex, men reported enhancing themselves and derogating other men in terms of possessing resources, social status, ambition, industriousness, and physical prowess (Buss, 1988; Buss & Dedden, 1990). Women reported using the tactics of enhancing their physical attractiveness and the derogation of other women's physical appearance to attract members of the opposite sex (Buss, 1988; Buss & Dedden, 1990; see also Cashdan, 1998).

Similarly, if the other sex's mate preferences determine the dimensions on which men and women compete with same-sex others, then men and women may be expected to show distress when their same-sex competitors embody these desired characteristics. To examine this hypothesis, college students from three different cultures (American, Dutch, and Korean) ranked how upsetting it would be if their rival had 11 characteristics (Buss, Shackelford, Choe, Buunk, & Dijkstra, 2000). Consistent with the hypothesis, men were more distressed than women by rivals with better financial prospects, better future job prospects, greater strength, and, in two cultures, higher status and prestige. Women were more distressed than men by a rival with a more attractive face and body.

Along similar lines, Walters and Crawford (1994) performed several studies to assess intrasexual competition and the effectiveness of competitive tactics. In their first study, participants generated tactics they use to compete with people of their same sex, as Buss (1988, 1992) did. However, unlike Buss, the researchers did not mention anything about competition in attracting mates to the participants. Even when not instructed to consider the context of mate attraction, men were more likely than women to report use of the tactic of demonstrating resources than other tactics. Women were more likely than men to report use of the tactic of attracting attention to appearance than other tactics. In the second study, participants reported how frequently they engaged in these competitive tactics. Men more frequently reported demonstrating resources than other tactics, and women more frequently reported attracting attention to appearance than other tactics. In the third study, participants rated how often their same-sex friends used these tactics. Similar to the second study, men reported that their friends used the tactic of demonstrating resources more often than other tactics, and women reported that their friends used the tactic of improving appearance more often than other tactics. Finally, in the fourth study, participants rated the perceived effectiveness of these tactics if they were using them to engage in competition with someone of their same sex. The most effective acts, according to participants, were those found to be used most often in the second and third studies (i.e., men's demonstrating resources and women's attracting attention to appearance).

Note that the traits preferred by men in their mates were the traits that women used to compete with each other, and the traits preferred by women in their mates were the traits that men used to compete with each other. Along these lines, the authors suggest that the sex differences in intrasexual competition (i.e., men competed with other men over resources, and women competed with other women over attractiveness) might impact a variety of contexts that

on the surface have little to do with mate selection. Mate selection criteria could be such powerful determinants of intrasexual competition that even when the context is not explicitly that of mating, the same mate criteria underlie what tactics are used (Walters & Crawford, 1994).

INTRASEXUAL COMPETITION WITHIN SAME-SEX FRIENDSHIPS

Men and women consistently report competing with others of their same sex, even strangers who they do not know (see Groelig, Haselton, & Baum, 2006; Hill, Powell, Buss, & Smith, 2006). In the current research I extend these ideas and focus on how mate selection pressures may influence competition and the experience of *schadenfreude* within same-sex friendships.

Friendships provide many benefits. Friends provide social support, protection, advice, help, and favors. Bleske and Shackelford (2001), however, suggest that in addition to their many benefits, same-sex friendships also involve costs and risks. For instance, friends know our most personal information and have the power to reveal it, may humiliate us in public and threaten reputations, and may compete with us for valuable resources, such as mates.

People tend to be friends with other people who are similar to themselves. These similarities are often based on characteristics that are also linked to mate preferences such as physical attractiveness, education, and intelligence (Bleske & Shackelford, 2001). Similarly, couples tend to positively assort on these characteristics, marrying people with similar backgrounds, education, attractiveness, and personality (Buss, 1984). Thus, our same-sex friends have more in common with our mates than would occur by chance, and these similarities might lead our friends to become our rivals in terms of attracting and retaining mates (Bleske & Shackelford, 2001). In a previous study, Bleske and Buss (as cited in Bleske & Shackelford, 2001) found that college-aged men and women reported that they and their close friends had

been attracted to the same person or had competed for the same person. In one sample of college students, over half of the participants said that they had at least sometimes competed with their friends to attract a member of the other sex (Bleske & Buss, 1998, as cited in Bleske & Shackelford, 2001). Thus, our friends may also be our rivals.

Bleske and Shackelford (2001) have suggested that people have developed psychological mechanisms that help them choose friends who will not compete with them. One such mechanism is a sensitivity to intrasexual rivalry. Thus, people are expected to be upset by intrasexual rivalry in their friendships. Bleske and Shackelford (2001) hypothesized that people would be a) more sensitive to rivalry with friends than strangers and b) more upset in response to rivalry from a friend who demonstrates the characteristics desired by the other sex than other characteristics. In their study, college students rated how upset they would be if a same-sex rival stranger and a same-sex close friend engaged in each of 102 mate attraction tactics (from Buss, 1988) to attract someone of the other sex. Both male and female participants reported more upset to the imagined rivalry of same-sex friends than same-sex strangers, supporting the first hypothesis, and the effect was larger among women. In support of the second hypothesis, women were more upset at a friend's enhanced physical attractiveness tactic than a friend's enhanced physical prowess or financial prospects tactic. Men were more upset at a friend's enhanced physical prowess as than a friend's enhanced physical attractiveness.

Contrary to predictions, men were not more upset than women were over a friend's enhancement of financial prospects or physical prowess. The researchers suggest that because women reported so much upset across all of the acts of rivalry committed by friends that this particular gender difference may have been obscured. In a second study, participants indicated whether a same-sex stranger or a same-sex close friend would distress them more by engaging in

the mate attraction acts to attract their romantic partners. Results indicated that participants were more upset about mating rivalry from same-sex friends than from same-sex strangers.

These studies suggest that people are cognizant of the potential for their friends to be mating rivals and that both men and women have developed psychological mechanisms that track betrayal and competition in friendships. Thus, people may experience *schadenfreude* if a same-sex friend experiences something that may compromise his or her standing on the characteristics desired by the other sex.

OVERVIEW OF PRESENT RESEARCH

In this research, I argue that direct or indirect competition for mates affects same-sex friendships. All individuals have to compete with others for mates. A woman's mate value is determined in large part by her age, waist-to-hip ratio, smile, complexion, and energy level; in other words, her overall physical attractiveness. Men's mate value is determined in large part by his age, social dominance, income, ambition, and physical size and strength; in other words, his overall status. Sugiyama (2006), has argued that women have evolved mechanisms that track other women's mate value and the cues associated with female mate value (i.e., physical attractiveness), and men have evolved mechanisms that track other men's mate value and the cues associated with male mate value (i.e., physical dominance and status; see also Pawlowski & Dunbar, 1999). In the current research, I expected women to experience *schadenfreude* when a female friend suffers a setback that is related to her mate value and men to experience *schadenfreude* when a male friend suffers a setback that is related to his mate value. Even if the two friends are not in direct competition for a mate and competition for mates is not a salient aspect of their relationship the mechanisms that evolved in response to problems related to mating may still be activated within the friendship and affect their experiences of *schadenfreude*.

I used two different methodologies, autobiographical narratives and surveys, to examine schadenfreude within friendships. Autobiographical narratives provide researchers with higher ecological validity than other laboratory techniques. These autobiographical narratives are accounts of actual events from participants' lives, providing rich data that is highly complementary to laboratory studies (Baumeister, Stillwell, & Wotman, 1990). Participants were asked to recount a time in their lives when they felt schadenfreude in the context of a same-sex friendship or an opposite-sex friendship.

The opposite-sex friendship conditions served as a control group to allow me to demonstrate that schadenfreude occurs within same-sex friendships because of direct or indirect mate competition. If schadenfreude occurs because of competition for mates, then participants should report different situations that elicit schadenfreude within their opposite-sex friendships versus their same-sex friendships. For example, I would not expect women to feel schadenfreude when their male friends gain weight or are seen wearing sweatpants in public, nor would I expect men to feel schadenfreude when their female friends are not chosen to be on a sports team or wreck their new cars because most men and women are not competing with their opposite-sex friends for mates.

Additionally, through the survey items, I prompted participants to think about how they might feel in a number of situations and report how likely it would be that they would feel schadenfreude in response to these situations. By doing so I had a more directed (versus open-ended) means of testing my hypotheses regarding sex differences in the events that evoke schadenfreude within same-sex friendships.

Hypotheses

Narrative Data

Hypothesis 1a: When asked to describe a situation when they felt schadenfreude toward a same-sex friend, women would be more likely than men to describe situations in which their friend suffered a misfortune of female mate value, operationalized as: a reduction in physical attractiveness through such events as weight gain, development of acne, grey hair, wrinkles.

Hypothesis 1b: Among women, I expected themes of physical attractiveness to be more prevalent in the same- versus opposite-sex friendship narratives.

Hypothesis 2a: When asked to describe a situation when they experienced schadenfreude toward a same-sex friend, men would be more likely than women to describe situations in which their friend suffered a misfortune of male mate value, operationalized as: a reduction in status or resources, physical strength, or dominance, through such events as not getting a coveted job, suffering a sports injury or loss.

Hypothesis 2b: Among men, I expected themes of loss of status and dominance to be more prevalent in the same- versus opposite-sex friendship narratives.

Hypothesis 3: I expected both men and women to provide narratives regarding schadenfreude felt toward opposite-sex friends that focus primarily on restorations of justice (i.e., people getting what they deserve) rather than misfortunes of mate value.

Survey Data

Hypothesis 4a: I expected women to report a greater likelihood of feeling schadenfreude (i.e., a moment of pleasure) toward female friends when their friends suffered misfortunes of female mate value, operationally defined as physical attractiveness, such as weight gain, development of acne, and wrinkles, than when their friends suffered misfortunes of male mate value, operationally defined as resources, physical prowess, and dominance.

Hypothesis 4b: I expected men to report a greater likelihood of feeling schadenfreude (i.e., a moment of pleasure) toward male friends when their friends suffered misfortunes of male mate value than when their friends suffered misfortunes of female mate value.

Hypothesis 4c: I expected that there would be no difference in the overall likelihood of feeling schadenfreude (i.e., a moment of pleasure) toward same-sex friends between women and men, but that the specific events that women report as a greater likelihood of leading them to feel schadenfreude toward their same-sex friends will differ from the specific events that men report as a greater likelihood of leading them to feel schadenfreude toward their same-sex friends. More specifically, women would report a greater likelihood of feeling schadenfreude toward their same-sex friends than would men when their same-sex friends suffered misfortunes of physical attractiveness, whereas men would report a greater likelihood of feeling schadenfreude toward their same-sex friends than would women when their same-sex friends suffered misfortunes of status.

Hypothesis 5a: I expected women to report a greater likelihood of feeling schadenfreude (i.e., a moment of pleasure) toward female friends than their male friends when their friends suffered misfortunes of female mate value.

Hypothesis 5b: I expected men to report a greater likelihood of feeling schadenfreude (i.e., a moment of pleasure) toward male friends than their female friends when their friends suffered misfortunes of male mate value.

Hypothesis 5c: I expected both men and women to report a greater likelihood of feeling schadenfreude toward opposite-sex friends regarding restorations of justice (i.e., people getting what they deserve) than misfortunes of mate value.

Hypothesis 6: I expected envy (Part I Survey Item #6) to be positively correlated with how long the schadenfreude lasted (Part I Survey Item #5) and how happy participants were following the friend's misfortune (Part I Survey Item #4). In other words, the more participants envy their friends a) the happier they are expected to be when their friend experiences a set-back and b) the longer the happiness is expected to last.

CHAPTER I. METHOD

Participants and Design

Three hundred participants (107 men and 191 women) from Bowling Green State University completed the study. Some participants were omitted from analyses because they 1) failed to follow directions (i.e., wrote about a same-sex friend when instructed to write about an opposite sex friend, could not think of a time when they felt *schadenfreude*), 2) were not yet 18, or 3) did not complete the survey. The final number of participants for the narrative analyses is 285 (104 men and 181 women), and for the survey analyses, it is 288 (105 men and 183 women). Participants received research credit in exchange for their participation. Baumeister, Stillwell, & Wotman (1990) suggested that at least 100 narratives are necessary for adequate statistical power. Thus, this study employs a 2 [Participant Sex: Male, Female] x 2 [Narrative target's sex: Male, Female] x 2 [Survey target's sex: Male, Female] x 2 [Order: One, Two] between-subjects design.^{4, 5}

Materials

Narratives

A brief paragraph describing and normalizing the feeling of *schadenfreude* introduced the participants to the study. The paragraph explained to participants that *schadenfreude* is a common feeling that does not indicate that they do not care about their friends. Participants read the following instructions:

Friendships involve a lot of different emotions. You might feel a sense of liking or love toward your friends. Sometimes when conflicts arise you might feel hurt or be angry with your friends. If something good happens to one of your friends you might share in his or her happiness. If something bad happens to one of your friends you might feel sympathy or sadness.

However, relationships between people can be complex and involve complex emotions. Sometimes, even if we would rather not admit it, we might experience a small degree of pleasure when something bad happens to one of our friends.

Previous research shows that this temporary feeling of pleasure in another's misfortune or suffering is very common. And, feeling it does not mean that you don't care about your friend. These are very normal feelings.

In this study, we are interested in finding out what specific events might lead people to experience this feeling of pleasure in response to another's misfortune. And we are looking specifically at what kinds of events cause this feeling to occur between friends.

Participants were instructed to try to think back on a time when something bad happened to one of their friends and they felt even a brief and temporary moment of pleasure upon hearing or seeing what had happened to their friend. Participants then described in as much detail as possible what happened to their friends that caused this feeling of pleasure. In this study participants were asked about either a same-sex or an opposite-sex friendship as determined by random assignment (Appendix A).

Surveys

Participants completed two surveys. The first survey, administered immediately after participants completed their narrative, asked six questions about the particular instance of schadenfreude that the participant wrote about in the narrative. Items assessed length of friendship, closeness, envy, jealousy, degree of schadenfreude, and duration of schadenfreude (see Appendix A).

Participants then completed the second survey. The second survey measured the likelihood that participants would feel schadenfreude in different situations regarding male or female friends in general, not specifically in reference to the people they described in the narratives. The scale ranged from 0 (not at all likely) to 10 (very likely). Because the schadenfreude literature is relatively scarce and does not include a validated schadenfreude scale,

I generated all of the dependent measures for the purposes of this study. Sample items include, “Imagine that a female friend gained a noticeable amount of weight. How likely is it that this would make you feel at least a moment of pleasure?” and “Imagine that a male friend got a really bad hair cut. How likely is it that this would make you feel at least a moment of pleasure?” (see Appendix A).

Among these 23 items were five items designed to represent misfortunes regarding physical appearance, which is a key component of female mate value. These items referred to: a) gaining a noticeable amount of weight, b) having an acne breakout, c) developing noticeable wrinkles, d) getting a really bad hair cut, and e) noticing grey hair. These five items were internally consistent ($\alpha = .86$) and were, therefore, averaged to form a Physical Attractiveness (PA) composite.

Additionally, seven items were designed to represent misfortunes regarding status, which is a key component of male mate value. These items referred to: a) getting beaten up in a fight, b) getting arrested for fighting while drunk, c) getting injured while participating in a sporting event, d) losing money while gambling, e) losing a sports bet, f) getting caught exaggerating a story, and g) missing a big play in a sports game. These seven items were internally consistent ($\alpha = .79$) and were, therefore, averaged to form a Status composite.

Because this is the first study to examine *schadenfreude* within friendships, I wanted to cast a wide net and learn as much as possible about the construct and how it operates within the domain of friendship. Therefore, guided by evolutionary theory, and keeping in mind the developmental stage of my participants, I generated additional items regarding events that might lead to *schadenfreude* among undergraduates. I constructed the additional items based on their relevance to themes of mating and justice restoration. Although these items are not related to any

specific prediction, I considered it worthwhile to examine a wide range of potential schadenfreude-eliciting events that might be of importance to undergraduates and that might occur in their day-to-day lives. Sample items include, “Imagine that a male (female) friend had a sexual advance rejected by a woman (man) he (she) was interested in,” and “Imagine that a male (female) friend was caught by a professor cheating on a test.”

Lastly, participants completed a demographics questionnaire on which they indicated their age, sex, ethnicity, relationship status, and year in school (see Appendix A).

Procedure

Participants in groups of 15 or fewer per session were instructed to sit anywhere they preferred when they arrived. Once everyone arrived, participants read a summary of the study and provided their signatures if they agreed to participate. I explained that anyone may withdraw at any time. Next, I asked participants to provide a written narrative. Specifically, participants were asked to describe a time when a misfortune happened to a friend that made them feel pleasure. Participants wrote about either a same-sex or an opposite-sex friend, which was determined via random assignment. After writing the first narrative, participants completed the first survey about the situation they had just described.

After completing the narrative and survey about the specific instance of schadenfreude, participants completed the survey on which they indicated how likely various events would be to make them feel at least a moment of pleasure toward a same-sex friend or toward an opposite-sex friend. When finished, participants returned the completed surveys to the experimenter. Participants received a debriefing form (Appendix B), and were thanked for their participation.

CHAPTER II. RESULTS AND DISCUSSION

First, I will report the findings relevant to the narrative data, including selected excerpts, characteristics of the friendships, and content analyses. Second, I will report the findings relevant to the survey data, including descriptive information and hypothesis testing.

Narrative Data

In an earlier pilot study, 41 undergraduates (approximately 50% female) wrote about a time when they experienced at least a brief moment of pleasure when something bad happened to one of their friends. They also described why they had thought they felt pleasure at their friend's misfortune. With no instructions to do so, 95% of these participants wrote about same-sex friends. Two coders (my advisor and I) read these narratives and using a data-driven approach generated categories that represented the most commonly reported themes in the narratives. We identified six broad themes that encompassed two to four specific sub-categories. *Mating-related* themes referred to explicit competition for a mate, mating related gains from the friends' misfortunes, and mating-related rejections or betrayals that preceded the friends' misfortunes. *Non-mating* themes referred to misfortunes that occurred in the context of competition in sports/work/academics, non-mating related gains from the friends' misfortunes, and non-mating related rejections or betrayals that preceded the friends' misfortunes. *Justice-related* themes referred to the friend getting what s/he deserved, and the friend not showing support when a similar misfortune happened to the participant, but later experienced the same misfortune. *Target-related* themes referred to the participant describing the friend as having everything, feeling better than the participant or everyone else, feeling like s/he was above the law or could get away with anything, and the participant was envious or jealous of the friend or friend's relationship. Finally, *altruistic schadenfreude* referred to misfortunes that the writer believed was

ultimately good for the friend. These instances of altruistic *schadenfreude* were coded as being mating or non-mating related. For each of these subcategories, we provided examples of the type of statements that might be classified as representing that particular subcategory.

After finalizing the coding system (see Appendix C), I familiarized two new coders, who were unaware of the hypotheses, with the coding procedures. These two individuals independently content analyzed all of the narratives from the current study using a dichotomous coding approach. In other words, they indicated whether each theme was absent or present within each narrative. Categories were not mutually exclusive; any narrative could be coded as reflecting more than one theme. Percent agreement reached acceptable levels within each theme (range: 88-99%). Kappa tests for each agreement were significant at $p < .001$. Because the two coders' judgments were deemed reliable, I used the results from only one of the coders to calculate the statistics in this study. This technique has been deemed acceptable by other researchers (D. M. Buss, personal communication, January 23, 2007).

As noted, we created the coding categories using a data-driven approach based on the pilot study data. We did this to most adequately represent participants' actual *schadenfreude* experiences, rather than impose on them my own theoretical assumptions. Consequently, the resulting coding system did not reflect the themes of physical attractiveness, strength, and dominance, namely, because participants simply did not explicitly mention these themes. In other words, although I had made theory-based predictions regarding these themes on which women and men were expected to differ, participants focused on misfortunes related to their friends' lost competitions or justice-restoring losses. Thus, the themes that comprise the coding system focus on events of mating or non-mating competition, but do not relate specifically to physical attractiveness and status. Therefore, I could not test Hypotheses 1a, 1b, 2a, or 2b using

the narrative data, in which I predicted differences between women and men's friendships on these dimensions. (However, I will test these predictions using the survey data.) Thus, the primary contribution of the content analysis of the narrative data will be to shed light on the nature of schadenfreude in everyday life, specifically within friendships. Additionally, I will test Hypothesis 3, that participants writing about opposite-sex friends would provide narratives that focus primarily on restorations of justice rather than mating-related misfortunes. For these reasons, I describe the results from the narratives in terms of same- versus opposite-sex friendships more broadly, rather than comparing, for example, female same-sex friendship and male same-sex friendships, specifically.

Excerpts from Narratives

Particularly noteworthy is that 99% of participants were able to readily recall a time when they felt pleasure at a friend's misfortune. This finding, by itself, demonstrates for the first time the ubiquity of schadenfreude within friendships.

The following narratives were selected to illustrate the kinds of accounts participants provided. One narrative was selected to illustrate each of the five major themes that characterize the schadenfreude-eliciting events.

In describing her friend who experienced a mating-related misfortune, one participant wrote, "...she had been talking to this guy for 2 years...even though I was happy for her, I was feeling jealous (because) I liked him for a really long time...this guy & I hooked up for a double-date with another one of my friends...we started dating that night. Even though I felt bad about the situation, I was kind of happy it worked out the way it did...Yes, she was hurt, but I didn't care because after a while he became my boyfriend. So, I took a little bit of pleasure seeing her hurt in the end."

In describing his friend who experienced a non-mating related misfortune, another participant wrote, “We were in the same class together... We had taken a hard test & I had gotten a better score on it than he had. He was a little mad because all year long he had been getting the better scores on tests. It made me happy to finally beat him.”

In describing his friend who experienced a misfortune related to justice, a participant wrote, “My friend SV is a very competitive guy & tries to be right about everything. He likes to be the center of attention and gets upset when not... we were at a bar with friends. He eventually got very drunk, kicked out of the bar and... roughed up... I felt good. It was almost in a way a feeling of karma for me, as if he got what he deserved just for the person he was, even if he did nothing wrong to me.” (This narrative was also coded as reflecting a "target-related" theme.)

In describing his friend who experienced a target-related misfortune, another participant wrote, “He got caught selling drugs and was almost kicked out of school. I didn’t want him kicked out, but I was glad he got in trouble. These feelings were not b/c I had moral problems with what he was doing, rather he was just so spoiled I found it enjoyable that something in his life wasn’t perfect.”

Finally, in describing altruistic schadenfreude, a participant had this to say, “My friend had been dating this guy... and he had cheated on her numerous times but (she) wouldn’t believe us when we told her. She finally caught him... I was happy she found out the truth & dumped him. She deserved better than that.”

Characteristics of the Participants' Friendships

Immediately after writing their narrative account participants answered several questions about the friend about whom they wrote their narrative account. These questions referred to: how close they felt to the friend at the time of the misfortune, how happy they felt when the friends’

misfortune occurred, how much envy and jealousy they felt toward the friend, and how long the happiness over the misfortune had lasted. Participants answered the first four questions on a 0 (not at all) to 10 (very) Likert-type scale. They answered the question about the length of the friendship in an open-ended format, and chose one of eight options regarding the duration of schadenfreude (options ranged from "a fleeting moment" to "more than a week"; see Appendix).

Participants' same- and opposite-sex friendships were fairly well established, having lasted, on average, 7.08 years ($SD = 4.66$) and 6.17 years ($SD = 4.82$), respectively, $t(281) = 1.625, p = .11$. Similarly, both same- ($M = 7.82, SD = 1.99$) and opposite-sex ($M = 7.59, SD = 2.21$) friendships were rather close at the time of the schadenfreude-eliciting event, $t(282) = 1.602, p = .11$. Further, in both same- ($M = 6.77, SD = 1.99$) and opposite-sex ($M = 6.75, SD = 2.08$) friendships participants reported that they were rather happy that the event occurred, $t(282) = .086, p = .93$. Although envy and jealousy comprised two independent survey items and are psychologically distinct, I combined the two items to form a composite index because lay people tend to not distinguish between the two constructs. Consistent with this notion, the two items were highly correlated ($r = .73, p < .001$) and formed an internally consistent composite index ($\alpha = .84$). (For convenience, I will refer to this composite index as envy.) Participants reported feeling relatively little envy toward their (overall $M = 3.16, SD = 2.61$). However, participants felt more envy toward same- ($M = 3.52, SD = 2.58$) versus opposite-sex ($M = 2.78, SD = 2.60$) friends, $t(281) = 2.383, p = .02$. A trend indicated a small positive correlation ($r_s = .11, p = .07$) between envy and the duration of schadenfreude, such that the more people envied their friends, the longer their schadenfreude lasted. Contrary to predictions, envy was not correlated with the degree of schadenfreude ($r_s = .09, p = .13$). Thus, Hypothesis 6 was tentatively partially supported.

For economy of presentation, I grouped the eight categories reflecting the duration of schadenfreude into “short”, “moderate”, and “long” time frames. “Fleeting moment,” “10 to 15 minutes,” and “30 minutes” represented a “short” duration. “An hour” and “several hours” represented a “moderate” duration. “An entire day,” “several days” and “more than one week” represented a “long” duration. Thirty-nine percent of participants rating same- and 34% opposite-sex friendships reported that their happiness (i.e., schadenfreude) lasted for a short time, $\chi^2 = .80$, $p = .37$. Relatively few people (16% writing about same-sex and 15% writing about opposite-sex friends) reported that their schadenfreude lasted a moderate amount of time, $\chi^2 = .28$, $p = .60$. Forty-five percent of participants rating same- and 53% opposite-sex friendships reported that their schadenfreude lasted a long time, $\chi^2 = 1.54$, $p = .21$. No significant differences existed between same- and opposite-sex friendships regarding the duration of schadenfreude (for additional detail, see Table 1).

Collapsed across friendship type, more men (44%) than women (31%) reported that their schadenfreude lasted a short time, ($\chi^2 = 5.23$, $p = .02$). There was a trend toward women (53%) being more likely than men (42%) to report that their schadenfreude lasted a long time, $\chi^2 = 3.62$, $p = .06$. There was no significant difference between men and women on the moderate time category, $\chi^2 = .16$, $p = .69$ (for additional detail, see Table 1).

To summarize, almost all participants (99%) described schadenfreude within the context of long-lasting and close friendships. Friendships were described similarly in envy and duration and degree of schadenfreude. The degree of schadenfreude experienced was positively correlated with the duration ($r_s = .38$, $p < .001$). In other words, the more intensely schadenfreude was experienced, the longer it lasted. These data shed light, for the first time, on how long feelings of schadenfreude last. To date, no other study has assessed the duration of schadenfreude.

Admittedly limited by their self-report and retrospective nature, these data, by themselves, constitute a new contribution to the schadenfreude literature.

Now I examine the actual content of the narratives to describe the themes of schadenfreude that occur within participants' everyday lives, and to determine if, as predicted, schadenfreude toward opposite-sex friends results from friends suffering misfortunes of related to justice restoration rather than mate value.

Results from Content Analysis

Within same-sex friendships, the non-mating-related theme was mentioned most frequently (39%), followed by the justice-related theme (26%), the target-related theme (19%), the mating related theme (10%), and altruistic schadenfreude (9%). Within opposite-sex friendships, the non-mating-related theme was mentioned most frequently (23%), followed by the justice-related theme (22%), the mating-related theme (19%), the target-related theme (14%), and altruistic schadenfreude (11%).

All of the results from the content analyses are presented in Table 2. Here, I highlight a sub-set of these results, focusing on significant results and trends. (Because the literature on schadenfreude is in its early stages, I report marginally significant results ($p < .10$) for the sake of maximizing the potential informative value of my study.)

Mating-Related Themes

As can be seen in Table 2, more participants writing about opposite-sex (19%) than same-sex friends (10%) mentioned misfortunes that were mating related, ($\chi^2 = 4.53, p = .03$). Specifically, 12% of opposite-sex narratives versus 3% of same-sex mentioned a mating-related rejection or betrayal before a friend's misfortune ($\chi^2 = 7.56, p < .01$). Additionally, 7% of opposite-sex versus 3% percent of same-sex narratives mentioned a mating related gain from the

friend's misfortune, $\chi^2 = 2.93, p = .09$. On the other hand, 4% of same- versus 0% of opposite-sex narratives specifically involved misfortunes regarding competition for a mate, $\chi^2 = 5.92, p = .02$. It is surprising that participants wrote more often about feeling mating-related schadenfreude toward their opposite versus same-sex friends. This finding suggests that an undercurrent of mating exists in some opposite-sex friendships.

Non-Mating-Related Themes

Also seen in Table 2, more participants writing about same-sex (39%) than opposite-sex (23%) friends mentioned misfortunes that were not directly mating related, $\chi^2 = 8.03, p = .02$. Twenty-seven percent of same-sex versus 11% of opposite-sex narratives mentioned competition in sports, works, or school, $\chi^2 = 10.94, p = .001$.

Justice-Related Themes

As seen in Table 2, there was no difference between participants writing about same-sex (26%) and opposite-sex (22%) friends in whether they mentioned justice-related themes, $\chi^2 = 1.48, p = .48$. Therefore, motivations related to restorations of justice do not seem to be limited to a particular friendship context.

Target-Related Themes

Also seen in Table 2, there was no difference between participants writing about same-sex (19%) and opposite-sex (14%) friends in whether they mentioned target-related themes, $\chi^2 = 2.13, p = .34$. Eight percent of same- versus 1% of opposite-sex narratives mentioned that the friend felt better than everyone, $\chi^2 = 8.34, p < .01$. The target-related theme was comprised mostly of narratives describing friends as "tall poppies" and reflected these friends as rather "bad" tall poppies. For instance, friends were described as unfairly receiving benefits, or feeling like they were above the law, doing things that were illegal because they felt they could get away

with it due to their somewhat superior status. Feather's research on tall poppies suggests that people prefer to see "bad" tall poppies fall over "good" tall poppies. Additionally, people are more likely to enjoy the fall of a person undeserving of his or her high status than someone who worked for his or her status. The finding that participants writing about same- or opposite-sex friends were equally likely to mention a fall of the tall poppy reflects the idea that people do not like to see an undeserving person in a superior position.

Altruistic Schadenfreude

Also seen in Table 2, more participants writing about opposite-sex (11%) than same-sex (9%) friends mentioned altruistic schadenfreude, ($\chi^2 = .47, p = .49$). However, this difference was non-significant. Of these, more participants writing about opposite-sex (6%) than same-sex (3%) mentioned altruistic schadenfreude that was mating related, ($\chi^2 = 3.77, p = .05$). These reports of altruistic schadenfreude may be veridical in nature whereby people actually do feel good that something bad happened to their friend because it is better for their friend in the long run. However, it is also plausible that people are deceiving themselves. Altruistic schadenfreude might be a way for people to justify the uncomfortable fact that they felt good when something bad happened to their friend, a socially unacceptable occurrence. Participants may not be as likely to mention their own benefits from their friends' misfortunes, but may try to justify why they felt good at their friends' misfortunes.

In Hypothesis 3, I predicted that, collapsed across sex, participants would provide narratives regarding schadenfreude felt toward opposite-sex friends that focus primarily on restorations of justice rather than mating related misfortunes. To test this hypothesis, I calculated chi square statistics on each of the five general coding themes (i.e., mating related, non-mating related, justice related, target related, altruistic schadenfreude) that encompassed the 15 coding

categories. As can be seen in Table 2, 22% of participants felt schadenfreude toward opposite-sex friends over misfortunes of justice restoration, whereas 19% of participants felt schadenfreude toward opposite-sex friends over mating related misfortunes ($\chi^2 = 2.12, p = .15$). Thus, Hypothesis 3 was not supported.

To summarize, narratives regarding same-sex friends' misfortunes had a dominant theme, non-mating related events, whereas narratives regarding opposite-sex friends' misfortunes were more consistently spread across themes. More participants writing about opposite-sex than same-sex friends mentioned events that were mating-related. Moreover, participants writing about same-sex than opposite-sex friends mentioned events that were non-mating-related. More specifically, significant differences existed on four sub-categories: more same- versus opposite-sex narratives mentioned competition for a mate, more same- versus opposite-sex narratives mentioned competition in sports, works, or school, more same- versus opposite-sex narratives mentioned that the friend felt better than everyone, and more opposite- versus same-sex narratives mentioned mating-related rejection or betrayal preceding a friend's misfortune.

From these narrative data, I have learned that schadenfreude is elicited from a variety of misfortunes, some mating-related and some non-mating related. This research documents for the first time that people may feel schadenfreude for altruistic reasons. It is possible that schadenfreude might not necessarily always reflect a darker side of friendship. Additionally, there seems to be a surprising paradox of participants feeling more mating-related schadenfreude toward their opposite-sex friends than their same-sex friends.

Now that I have described how participants experience schadenfreude in their everyday lives, I present the results from the survey portion of the study, where I asked specific questions regarding schadenfreude toward their same- or opposite-sex friends collectively.

Survey Data

After completing the narrative about a time when they felt at least a moment of pleasure when a misfortune happened to one of their friends and the survey items relating to that particular instance of *schadenfreude*, participants completed a survey on which they were asked to think about either their same- or opposite-sex friends in general and report how likely it was that they would feel at least a moment of pleasure (*schadenfreude*) over one of these friend's experiencing each of 23 misfortunes.

To explore a) whether my a priori scales emerged as valid sub-scales, b) whether the survey items assessed a unified psychological construct of *schadenfreude* among my participants, and c) whether additional sub-scales emerged in addition to those conceptualized a priori, I subjected the 23 items to an exploratory factor analysis. A principal components factor analysis with promax rotation yielded five components that accounted for approximately 64% of the variance. I interpreted the results of the factor analysis using the following criteria: a) Eigenvalues of greater than 1.0, b) a factor loading cutoff value of .45, and c) an examination of the scree plot. Based on the results (see Table 3 for the items that loaded on each factor) I named the factors Social Embarrassment, Justice Restoration, Devalued Mating Reputation, Physical Appearance (PA), and Status. One item, having a sexual advance rejected, did not load on any factor. However, this item is theoretically relevant to my conception of same-sex *schadenfreude* and was, therefore, retained and treated as an individual item.

To examine whether the items from each factor could be averaged to form composite scales, I assessed whether the items were internally consistent. Three of the five scales represented internally consistent constructs, Social Embarrassment ($\alpha = .87$), Justice Restoration ($\alpha = .85$), and PA ($\alpha = .84$). The items from the other two factors, Devalued Mating Reputation

($\alpha = .65$) and Status ($\alpha = .66$), did not reach traditionally accepted levels of internal consistency. However, I considered these scales to be theoretically meaningful, and because they came very close to the standard cutoff of $\alpha = .70$, I chose to retain the scales. Finally, all 23 items collectively represented an internally consistent construct ($\alpha = .92$); therefore, I averaged the scores on all 23 survey items to form an overall index of schadenfreude.

Three of the five items I conceptualized a priori to represent physical attractiveness: gained a noticeable amount of weight, developed an acne breakout, and developed noticeable wrinkles loaded on PA. However, “got a really bad hair cut” and “started noticing grey hair” loaded on Social Embarrassment (see Table 3). Three of the seven items I conceptualized a priori to represent status: being beaten up in a fight, getting injured while participating in a sporting event, and missing a big play in a sports game loaded on Status. However, three of the items: getting arrested for fighting while drunk, losing money while gambling, and getting caught exaggerating a story loaded on Justice Restoration. Additionally, “losing a sports bet” loaded on Social Embarrassment (see Table 3). Because the results from the factor analysis represent participants’ conception of schadenfreude rather than my own, I believe that this representation of the data is more ecologically valid than my a priori conceptualizations of physical attractiveness and status. Therefore, throughout the remainder of the paper I will report the results using the composites derived from the factor analytic results rather than those conceptualized a priori. Overall, the factor analysis yielded results that were theoretically meaningful regarding the different types of misfortunes that elicit schadenfreude within friendships.

In discussing my results, I first provide descriptive information about which specific events (e.g., weight gain, losing a bet) were viewed as most and least likely to elicit

schadenfreude within women and men's same-sex friendships, respectively. Second, I report which broader categories of events (as determined from the factor analysis, e.g., social embarrassment, justice restoration) were viewed as most and least likely to elicit schadenfreude among women and men's same-sex friends, respectively. Third, I report the results that pertain to the hypotheses regarding a) elicitors of schadenfreude *within* women and men's same-sex friendships, respectively, and b) elicitors of schadenfreude *between* women and men's same-sex friendships.

After presenting the results regarding same-sex friendships, I provide descriptive information about the specific events that were viewed as most and least likely to elicit schadenfreude within women and men's opposite-sex friendships, respectively. Second, I report which broader categories of events were viewed as most and least likely to elicit schadenfreude among women and men's opposite-sex friends, respectively. Third, I report the results that pertain to hypotheses regarding a) elicitors of schadenfreude *within* women and men's opposite-sex friendships, respectively, b) elicitors of schadenfreude *between* women's same- versus opposite-sex friendships, and c) elicitors of schadenfreude *between* men's same- versus opposite-sex friendships.

Same-Sex Friendships

Descriptive Results

Women rating female friends: Individual items. To determine which events women considered the most and least likely to elicit schadenfreude toward their female friends, I calculated mean scores for the 23 individual survey items and rank ordered them from highest to lowest. As seen in Table 4, the five misfortunes that women reported as the most likely to elicit schadenfreude toward their female friends were friends: a) getting caught cheating on their

boyfriends, b) getting caught exaggerating a story, c) gaining a noticeable amount of weight, d) tripping in front of a group of the opposite sex, and e) having a sexual advance rejected. The five misfortunes that women reported as the least likely to elicit schadenfreude toward their female friends were friends (in order of means, lowest to highest): a) getting injured while participating in a sporting event, b) getting beaten up in a fight, c) contracting an STD, d) having a coffee stain on shirt in public, and e) developing noticeable wrinkles.

Men rating male friends: Individual items. Similarly, to determine which events men thought of as the most and least likely to elicit schadenfreude toward their male friends, I calculated mean scores on each of the 23 individual survey items and rank ordered them from highest to lowest. Also seen in Table 4, the five misfortunes that men reported as the most likely to elicit schadenfreude toward their male friends were friends: a) tripping in front of a group of the opposite sex, b) getting a really bad hair cut, c) getting caught exaggerating a story, d) having a sexual advance rejected, and e) getting caught cheating on their girlfriends. The five misfortunes that men reported as the least likely to elicit schadenfreude toward their male friends were friends (in order of means, lowest to highest): a) getting injured while participating in a sporting event, b) contracting an STD, c) getting beaten up in a fight, d) developing noticeable wrinkles, and e) missing a big play during a sports game.

Note that the specific events that were most likely to elicit schadenfreude within women's and men's same-sex friendships were highly similar to one another and included: being caught cheating on a boy/girlfriend, caught exaggerating a story, tripping in front of a group of the opposite sex, and having a sexual advance rejected. The only differences between women's and men's results were in the ordering of the specific events, and that women's same-sex

schadenfreude highlighted a friend's weight gain, whereas men's same-sex schadenfreude highlighted a friend's bad hair cut.

However, these similarities may mask important differences. To examine potential sex differences on the common events in women and men's top five schadenfreude-eliciting events, I conducted a series of independent samples t-tests. Women reported that they were more likely to feel schadenfreude when their same-sex friend was caught cheating on their romantic partner than did men, $t(127) = -1.99, p < .05$. Additionally, men reported that they were more likely to feel schadenfreude when their same-sex friend tripped in front of a group of the opposite sex than did women, $t(127) = 2.20, p = .03$. No significant differences emerged on women and men's ratings of the likelihood they would feel schadenfreude when their same-sex friends were caught exaggerating a story and had a sexual advance rejected, $t(127) = -.33, p = .74$, $t(127) = 1.46, p = .15$, respectively (see Table 4 for means and standard deviations).

Thus, even though the events most likely to elicit schadenfreude were similar for women and men in same-sex friendships, there were some significant differences between sexes in how likely the events were to elicit schadenfreude. Of particular importance is that for both women and men three of the top five schadenfreude-eliciting events included mating-related misfortunes. Of particular interest is that women's ratings indicated that a same-sex friend getting caught cheating on her boyfriend would be the event most likely to elicit schadenfreude. This is interesting because promiscuity is particularly threatening to female mate value. Similarly, men's ratings indicated that a same-sex friend tripping in front of a group of the opposite sex would be the event most likely to elicit schadenfreude. This is interesting because tripping in front of people may be interpreted as one's lacking physical coordination, which is particularly threatening to physical dominance and male mate value. Although these findings were not

predicted, that women and men rated these particular items as the most likely to elicit schadenfreude is consistent with the theoretical propositions that guided this research.

Additionally, four of the five events considered *least* likely to elicit schadenfreude were the same for women and men's same-sex friendships. To examine potential sex differences on these items, I conducted a series of independent samples tests. No significant differences emerged. Men and women were equally likely to report that they would feel schadenfreude toward their same-sex friends if their friends were to develop wrinkles, contract an STD, get beaten up in a fight, or get injured during a sporting event. Note that several of the events that were least likely to elicit schadenfreude included direct harm to friend. It is probable that while friends may be competing with each other, they are doing so within the context of friendship and probably do not truly want direct physical harm to befall their friends.

Examining the items at the individual level provides detailed information regarding specific events that may elicit schadenfreude among undergraduates. However, examining the data at the item level does not allow an interpretation of the broader categories of schadenfreude-eliciting misfortunes. Therefore, I now report a set of findings regarding how the scales were ranked. These results conceptually parallel those presented for the 23 individual items.

Women rating female friends: Scales. To determine which broad categories of events women thought of as the most and least likely to elicit schadenfreude toward their female friends, I calculated mean scores for the five scales and rank ordered them from highest to lowest. As seen in Table 5, Justice Restoration was the most likely and Status was the least likely to elicit schadenfreude among women toward female friends. I conducted a one-way repeated measures analysis of variance (ANOVA) on the five scales to examine if significant differences existed between the scales. This analysis produced a significant result, $F(4, 328) = 38.10, p <$

.001. To determine which scales differed significantly from each other, I conducted a series of pairwise comparisons. Four of the five scales differed significantly from each other. Specifically, PA (ranked as second most likely to elicit schadenfreude) did not significantly differ from Social Embarrassment (ranked as third most likely to elicit schadenfreude; see subscripts in Table 5).

Men rating male friends: Scales. Similarly, I examined which scales were the most and least likely to elicit schadenfreude among men's same-sex friends. Also seen in Table 5, Social Embarrassment was the most likely and Status was the least likely to elicit schadenfreude among men toward male friends. Again, I conducted a one-way repeated-measures ANOVA on the five scales. This analysis produced a significant result $F(4, 180) = 29.30, p < .001$. To determine which scales differed significantly from each other, I conducted a series of pairwise comparisons. Social Embarrassment (ranked as most likely to elicit schadenfreude) and Justice (ranked second most likely to elicit schadenfreude) were rated similar to each other but differed significantly from PA, Devalued Mating Reputation, and Status, which were also rated similar to each other (see subscripts in Table 5).

To examine potential sex differences on the scales, I conducted independent samples *t*-tests. I discuss PA and Status later in the Results section regarding hypothesis testing. Therefore, for now I will report only the results relevant to Justice Restoration, Social Embarrassment, and Devalued Mating Reputation. As seen in Table 5, men reported a greater likelihood than women of feeling schadenfreude toward same-sex friends regarding Social Embarrassment, $t(127) = 2.41, p = .02$. Women and men did not differ significantly on the likelihood that Justice Restoration or Devalued Mating Reputation would elicit schadenfreude, $t(127) = -1.08, p = .28$, $t(127) = -.35, p = .72$, respectively.

Hypothesis Testing About Same-Sex Friendships

In Hypothesis 4a, I predicted that women would be more likely to feel schadenfreude toward same-sex friends when their friends suffered misfortunes related to physical attractiveness than status. To test this hypothesis, I selected only the data regarding female participants' ratings of female friends and conducted a one-tailed paired samples t-test on PA and Status. As seen in Table 5, consistent with the prediction, women reported a greater likelihood of feeling schadenfreude if their female friend suffered a misfortune regarding PA than Status, $t(82) = 7.82, p < .0001$. Thus, Hypothesis 4a was supported.

In Hypothesis 4b, I predicted that men would be more likely to feel schadenfreude toward same-sex friends when their friends suffered misfortunes related to status than physical attractiveness. To test this hypothesis, I selected only the data regarding male participants' ratings of male friends and conducted a one-tailed paired samples t-test on PA and Status. Also seen in Table 5, contrary to the prediction, men reported a greater likelihood of feeling schadenfreude if their male friend suffered a misfortune of PA than Status, $t(45) = 2.13, p = .02$. It appears that college-aged men are more likely to feel schadenfreude over reductions in physical attractiveness than over reductions in status and dominance. Thus, Hypothesis 4b was not supported.

In sum, data from the female participants were consistent with expectations, whereas the data from male participants were not. I will mention possible reasons for the surprising results from male participants in the discussion section. Now that I have examined the unique characteristics of schadenfreude *within* women and men's same-sex friendships, I turn to a comparison of schadenfreude *between* women and men's same-sex friendships.

Comparing women and men's same-sex friendships. In Hypothesis 4c, I predicted that women and men would not differ in the *overall* likelihood that they would feel schadenfreude toward their same-sex friends, but women would be more likely than men to feel schadenfreude

toward same-sex friends regarding misfortunes of PA and men would be more likely than women to feel schadenfreude toward same-sex friends regarding misfortunes of Status. To test this hypothesis, I selected only the data regarding same-sex friends and conducted a series of independent samples t-tests to examine whether women rating female friends would differ from men rating male friends on overall schadenfreude, PA, and Status. Consistent with the prediction, women ($M = 2.92$, $SD = 1.70$) and men ($M = 2.93$, $SD = 1.49$) did not differ in the overall likelihood they would feel schadenfreude toward a same-sex friend, $t(127) = .06$, $p = .96$. However, women reported a greater likelihood of feeling schadenfreude than men if a same-sex friend suffered a misfortune of physical attractiveness, $t(107.39) = -2.57$, $p = .01$.⁶ Contrary to the prediction, men did not report a greater likelihood of feeling schadenfreude than women if a same-sex friend suffered a misfortune of Status, $t(127) = .27$, $p = .79$ (see Table 5 for means and standard deviations). Thus, Hypothesis 4c was partially supported.

These results suggest that women would feel more happiness toward same-sex friends regarding misfortunes related to reductions in physical attractiveness than would men, providing support for the idea that schadenfreude functions, in part, as a mate-value status tracker that aids in intrasexual competition. However, these results also suggest that men were not more concerned with misfortunes related to reductions in status than were women. I consider these surprising results regarding the male participants in the Discussion section.

Opposite-Sex Friendships

If schadenfreude serves the proposed function of aiding in the assessment of the mate value of intrasexual competitors, then schadenfreude should occur in response to mate value related misfortunes in same-sex friendships but not in opposite-sex friendships. Instead, events that restore justice are expected to elicit the most schadenfreude within opposite-sex friendships.

First, I report the events and scales, respectively, that were the most and least likely to elicit schadenfreude within opposite-sex friendships. Then, I report the results of analyses regarding my hypotheses about same- versus opposite-sex friendships.

Descriptive Information

Women rating male friends: Individual items. As seen in Table 6, the five misfortunes that women reported as the most likely to elicit schadenfreude toward their male friends were friends: a) getting caught exaggerating a story, b) getting caught cheating on their girlfriends, c) tripping in front of a group of the opposite sex, d) having a sexual advance rejected, and e) losing money while gambling. The five misfortunes that women reported as the least likely to elicit schadenfreude toward their male friends were friends (in order of means, lowest to highest): a) getting injured while participating in a sporting event, b) getting beaten up in a fight, c) developing noticeable wrinkles, d) developing an acne breakout, and e) contracting an STD.

Men rating female friends: Individual items. Also seen in Table 6, the five misfortunes that men reported as the most likely to elicit schadenfreude toward their female friends were friends: a) getting caught exaggerating a story, b) getting caught cheating on their boyfriends, c) having a sexual advance rejected, d) tripping in front of a group of the opposite sex, and e) losing a sports bet. The five misfortunes that men reported as the least likely to elicit schadenfreude toward their female friends were friends (in order of means, lowest to highest): a) contracting an STD, b) getting injured while participating in a sporting event, c) getting beaten up in a fight, d) developing noticeable wrinkles, and e) developing an acne breakout.

Note that the specific events most likely to elicit schadenfreude within women and men's opposite-sex friendships were highly similar to one another and included: being caught exaggerating a story, caught cheating on a boy/girlfriend, tripping in front of a group of the

opposite sex, and having a sexual advance rejected. The only differences between women and men's results were in the ordering of two specific events (tripping in front of a group of the opposite sex, having a sexual advance rejected), and that women's opposite-sex schadenfreude highlighted a friend's losing money gambling, whereas men's opposite-sex schadenfreude highlighted a friend's losing a sports bet.

To examine potential sex differences on the common events in women and men's top five schadenfreude-eliciting events, I conducted a series of independent samples t-tests. No significant differences emerged. Because women and men's opposite-sex friendships equally lack intrasexual competition for mates, I had no a priori reason to expect opposite-sex friendships to differ between sexes in the specific kinds of events that elicit schadenfreude. Consistent with this reasoning, a great deal of similarity existed between the two sexes overall regarding the events that elicit schadenfreude in opposite-sex friendships.

Additionally, the five events considered *least* likely to elicit schadenfreude were the same for women and men's opposite-sex friendships. To examine potential sex differences on these items, I conducted a series of independent samples t-tests. No significant differences emerged. Men and women were equally likely to report that they would feel schadenfreude toward their opposite-sex friends if their friends were to contract an STD, develop an acne breakout, develop wrinkles, get beaten up in a fight, or get injured during a sporting event. Additionally, once again, the events least likely to elicit schadenfreude included direct harm to a friend.

Women rating male friends: Scales. As seen in Table 7, Justice Restoration was the most likely and Status was the least likely to elicit schadenfreude among women toward male friends. I conducted a one-way repeated measures ANOVA on the five scales to examine if significant differences existed between scales. This analysis produced a significant result, $F(3.17, 313.81) =$

58.32, $p < .001$.⁷ To determine which scales differed significantly from each other, I conducted a series of pairwise comparisons. All scales differed significantly from each other (see subscripts in Table 7).

Men rating female friends: Scales. Also seen in Table 7, Justice Restoration was the most likely and Status was the least likely to elicit schadenfreude among men toward female friends. Again, I conducted a one-way repeated measures ANOVA on the five scales. This analysis produced a significant result, $F(3.40, 197.07) = 27.15, p < .001$.⁸ To determine which scales differed significantly from each other, I conducted a series of pairwise comparisons. Justice Restoration (ranked as most likely to elicit schadenfreude) and Social Embarrassment (ranked as second most likely to elicit schadenfreude) were rated similar to each other but differed significantly from Devalued Mating Reputation, PA, and Status, which were also rated similar to each other.

Note that women's and men's opposite-sex schadenfreude-eliciting events appear in exactly the same rank order. Although the scales appeared in the same order once ranked, it was possible that sex differences still existed in the degree of likelihood that each category of misfortune would elicit schadenfreude among women and men's opposite-sex friendships. To examine potential sex differences on the scales, I conducted a series of independent samples *t*-tests. No significant differences emerged. Women and men were equally as likely to feel schadenfreude over the same categories of misfortunes in the same order toward opposite-sex friends.

Hypothesis Testing About Opposite-Sex Friendships

In Hypothesis 5a, I predicted that women would be more likely to feel schadenfreude toward their female friends than toward their male friends when their friends suffered

misfortunes related to physical attractiveness. To test this hypothesis, I selected only the data regarding female participants and conducted an independent samples t-test examining women rating female and male friends on PA. Consistent with the hypothesis, women reported a greater likelihood of feeling schadenfreude toward their female ($M = 3.18$, $SD = 2.55$) than their male friends ($M = 1.40$, $SD = 1.68$) if their friends suffered a misfortune of PA, $t(181) = -5.64$, $p < .001$. Thus, Hypothesis 5a was supported.

In Hypothesis 5b, I predicted that men would be more likely to feel schadenfreude toward their male friends than toward their female friends when their friends suffered misfortunes related to status or dominance. To test this hypothesis, I selected only the data regarding male participants and conducted an independent samples t-test examining men rating male and female friends on Status. Contrary to predictions, however, men did not report a greater likelihood of feeling schadenfreude toward their male friends ($M = 1.40$, $SD = 1.45$) than toward their female friends ($M = 1.38$, $SD = 1.79$) if their friends suffered a misfortune of status or dominance, $t(103) = .04$, $p = .97$. Thus, Hypothesis 5b was not supported.

In Hypothesis 5c, I predicted both women and men be more likely to feel schadenfreude toward their opposite-sex friends regarding restorations of justice (i.e., people getting what they deserve) than misfortunes of mate value. To test this hypothesis, I selected only the data regarding female participants' ratings of male friends and conducted one-tailed paired samples t-tests to examine whether women rated misfortunes of Justice Restoration as more likely to elicit schadenfreude toward their male friends than PA and Status. Women reported a greater likelihood of feeling schadenfreude toward opposite-sex friends over Justice Restoration than PA and Status, $t(99) = 9.83$, $p < .0001$, $t(99) = 11.60$, $p < .0001$, respectively (see Table 7 for means and standard deviations).

Similarly, I selected only the data regarding male participants' ratings of female friends and conducted one-tailed paired samples t-tests to examine whether men rated misfortunes of Justice Restoration as more likely to elicit schadenfreude toward their female friends than PA and Status. Men were more likely to feel schadenfreude toward opposite-sex friends over Justice Restoration than PA and Status, $t(58) = 6.08, p < .0001$, $t(58) = 7.75, p < .001$, respectively. Thus, Hypothesis 5c was supported. These results suggest that the idea that opposite-sex friends will report more schadenfreude over Justice Restoration misfortunes than mating-related misfortunes is accurate, and provides additional support for Hypothesis 3.

CHAPTER III. GENERAL DISCUSSION

This research makes several contributions to the literatures on schadenfreude and friendship. First, it demonstrates that schadenfreude is ubiquitous within college students' friendships. Second, it is the first study to examine the duration of schadenfreude. Third, in this research, I adopted a novel theoretical perspective regarding the possible evolved functions of schadenfreude. Additionally, this study utilized a two-part methodology that capitalized on the richness of open-ended narrative accounts as well as the ability of specific survey items to test theoretically derived predictions. Each contribution will be discussed in turn.

This research powerfully demonstrates the ubiquity of schadenfreude among college students' friendships. Fully, 99% of participants were able to freely recall a time when they felt at least a moment of pleasure when something bad happened to one of their friends. While just about everybody was able to tell us about their feelings of schadenfreude when in a research context under anonymous conditions, anecdotal evidence suggests that far fewer people are willing to publicly admit that they would feel schadenfreude toward their friends. The implicit norm to be kind and good to one's friends may make people less likely to admit feeling schadenfreude, and thus, feel more alone in experiencing it. Although this has not been documented empirically, people may feel guilt or a sense of repugnance when they feel schadenfreude toward those they love. Researchers interested in studying schadenfreude as it naturally occurs within personal relationships should take care to normalize and de-stigmatize the feeling of schadenfreude.

Other studies on schadenfreude have examined the degree of schadenfreude, its relationship to state and trait envy, resentment, and sympathy. However, none of these studies have assessed the duration of schadenfreude. In the present research, college students described

events that prompted them to feel schadenfreude toward their friends and were asked to indicate how long their schadenfreude lasted. Most participants said that their schadenfreude lasted either a very short (e.g., a fleeting moment) or a long time (e.g., several days). Although these data are limited by their retrospective and self-report nature, they provide a starting point for understanding variation in the duration of schadenfreude. For example, these data document for the first time that men's schadenfreude may be more short-lived than women's. Future research that examines the factors (e.g., specific kinds of misfortunes, individual difference variables) that predict whether schadenfreude is a fleeting or long-lasting emotion will provide a deeper understanding the phenomenon.

This research was grounded in evolutionary theory (e.g., sexual strategy theory) with a specific focus on the possible evolved functions of schadenfreude. I argue that schadenfreude functions, in part, as a mate-value tracking mechanism within friendships. As Sugiyama (2006) has argued, women probably have evolved mechanisms that track other women's mate value (cued primarily by physical attractiveness), and men probably have evolved mechanisms that track other men's mate value (cued primarily by social status). These evolutionary arguments are based on the notion that mate value is relative to the local population of competitors. Therefore, to know one's own mate value you must know the mate value of others who may be competing with you for mates. Schadenfreude within friendships may have evolved because it helped solve one of the adaptive problems of mating, which is to assess one's own mate value vis-à-vis others. Thus, schadenfreude may be understood as a psychological mechanism that evolved, in part, to gauge one's relative mate-value and, subsequently, solve the problems associated with intrasexual competition for mates among friends.

The primary hypothesis of this research was that schadenfreude would be elicited within same-sex friendships by events that lowered one's friends' mate value. Consistent with predictions, my survey results indicated that women reported a greater likelihood than men of feeling schadenfreude when their same-sex friends experienced a misfortune that lowered their physical attractiveness. Similarly, women reported a greater likelihood of feeling schadenfreude toward their same-sex friends when their friends' physical attractiveness, versus their social status, was reduced. Women also reported a greater likelihood of feeling schadenfreude toward their same- than their opposite-sex friends over misfortunes resulting in reductions in physical attractiveness. Thus, my predictions concerning schadenfreude within women's friendships were supported. These new findings, that schadenfreude is elicited among female friends over misfortunes resulting in reductions of female mate value, suggest that female friends, in many cases, may be competing for mates.

I expected schadenfreude to be elicited within men's same-sex friendships by events that lowered their friends' mate value, as conceptualized as status. This prediction was not supported. Status-lowering events were originally conceptualized as a) getting beaten up in a fight, b) getting arrested for fighting while drunk, c) getting injured while participating in a sporting event, d) losing money while gambling, e) losing a sports bet, f) getting caught exaggerating a story, and g) missing a big play in a sports game. However, the data-driven factor analysis yielded a "Status" factor that included 3 rather than all 7 of these items (e.g., friend was beaten up in a fight, friend missed a big play in a sports game, injured during a sporting event). Of interest is that a "Social Embarrassment" factor emerged and, compared to the other factors, men were most likely to report feeling schadenfreude when their same-sex friends experienced a socially embarrassing event (e.g., tripped in front of members of the opposite sex). Men were

also more likely than women to report being likely to feel *schadenfreude* when their same-sex friends experienced a misfortune that was socially embarrassing. Additionally, men reported a greater likelihood of feeling *schadenfreude* toward their same-sex friends when their friends experienced a socially embarrassing event versus a reduction in physical attractiveness.

Embarrassment is thought to result from the perception that one's social identity within an interaction has been damaged or threatened (Haidt, 2003). In other words, socially embarrassing events may lower a person's, especially a male's, social status. Thus, if embarrassment is conceptualized as being intimately connected to status, then these results concerning social embarrassment may be interpreted as consistent with my hypothesis regarding *schadenfreude* in men's same-sex friendships.

Research on *schadenfreude* has focused on clarifying how envy and resentment contribute to *schadenfreude* (see Smith et al., 1996; van Dijk, Ouwerkerk, Goslinga, Nieweg, & Galluci, 2006). This focus stems from the seminal work by Feather on people's reactions to the fall of "tall poppies" (Feather, 1989). In the current study, consistent with my reasoning, participants reported more envy toward same- versus opposite-sex friends. A trend suggested that a small positive correlation between duration of *schadenfreude* and envy existed ($r = .11$). In other words, the more people envied their friends, the longer *schadenfreude* lasted. However, envy was not significantly related to the degree of *schadenfreude*. It is possible that while envy is not related to how much happiness one will feel at a friend's misfortune, it does determine how long that feeling will last. This interesting finding suggests that future researchers should clarify the relationship between envy and *degree* of *schadenfreude*, as well as the relationship between envy and the *duration* of *schadenfreude*.

While researchers have focused on these important issues related to envy, they may have inadvertently overlooked an important aspect of *schadenfreude*, namely, the specific *type of misfortune* that leads one to experience this emotion. My narrative data indicated that *schadenfreude* is elicited by a wide range of misfortunes (e.g., a friend being rejected by a potential dating partner, a friend being sent to the war in Iraq). I contend that the *type of misfortune* is important in determining whether *schadenfreude* is felt and to what degree (see also Portmann, 2000). To date, researchers have focused on relatively narrow range of *schadenfreude*-eliciting events. Researchers have asked participants to read or view a video about a hypothetical target person. Envy has been manipulated by portraying the target as high versus average in academic achievements, athletic ability, and future status potential (i.e., hoping to get into a good medical school versus hoping to get into any medical school at all). Participants are then informed of some misfortune that has befallen the person in the article or video. Often, this misfortune is related to justice (e.g. being caught stealing amphetamines or a laptop). While the deservingness of the misfortune has been manipulated, the misfortune itself has rarely been manipulated. If *schadenfreude* serves the proposed function of aiding in tracking competitors' mate value, then the type of events likely to elicit *schadenfreude* can be gleaned from evolutionary theory. As demonstrated in the current research, not all misfortunes elicit *schadenfreude* to the same degree. Moreover, whether a misfortune elicits *schadenfreude* depends, in part, on the relationship (e.g., same- or opposite-sex friendship) between the target and the evaluator (see also Reis, Collins, & Berscheid, 2000; Wilson & Daly, 1997).

As mentioned, researchers have created feelings of envy and *schadenfreude* in their participants by manipulating the target's status (e.g., through portraying high or average levels of athletic skill or intelligence). Evolutionary psychologists view these forms of status as having

been more important over evolutionary history to men's than women's reproductive success. To date, schadenfreude research has not included manipulations of characteristics that might be of particular importance to women's mate value (i.e., physical attractiveness). Thus, researchers may have unknowingly been examining a largely male-oriented experience of schadenfreude. The present research extends previous research by manipulating the type of misfortune (appearance related or status related), which allowed us to examine both male- and female-oriented schadenfreude. As noted, women were more likely than men to say that reductions in physical attractiveness elicited schadenfreude among same-sex friends, whereas men were more likely than women to say that social embarrassment elicited schadenfreude among same-sex friends. As researchers attempt to fully understand how schadenfreude operates among both men and women, they should consider specific types of misfortune, the particular consequences of those misfortunes, and the specific relationship within which schadenfreude occurs.

In the ancestral environment, people lived in relatively small groups of 50 to 200 people (Dunbar, 1993), among kin and friends, people who knew each other well (Buss, 2000). Psychological mechanisms that aided in intrasexual competition probably developed within this context (see Buss, 2004). Therefore, the evolved solutions to the evolutionary problem of assessing and tracking a competitor's mate value may be most fruitfully examined within the context of close and intimate relationships. Research has thus far focused primarily on strangers introduced to the participants by way of video or paper summary. As an exception to this general rule of studying schadenfreude felt toward "paper people", one study asked participants to describe an actual situation in which they had felt pleasure at another's misfortune (see Hareli & Weiner, 2002). Eighty-three percent of these participants responded by mentioning someone with whom they had a personal relationship, including family members, work associates, and

friends. The high rate of freely recalling schadenfreude toward people with whom they had personal relationships (versus, for examples, celebrities) suggests that researchers could examine schadenfreude with greater ecological validity by studying it within these kinds of relationships. The present research focused on schadenfreude experienced within friendships, which has previously been a wholly unexplored topic.

Finally, recall that 27% of participants writing about same-sex and 11% of those writing about opposite-sex friends wrote about feeling schadenfreude in contexts in which they were competing with their friends in terms of work, sports, or academics. I originally conceptualized these events as being "non-mating related." Thus, on the surface, it appears that competition in work, sports, and academics is related to money, team placement, and grades. However, the evolutionary perspective suggests that, especially among men, competition in these contexts is fundamentally tied to solving the adaptive problem of competition for mates. Thus, it is possible that while participants may not have specifically mention mating competition or mating-related gains and losses, for example, in "competition in work/sports/academics", the underlying motivation may be mating related (e.g., see Walters & Crawford, 1994). In other words, it is possible that the proximate events that participants wrote about (e.g., feeling happy that a friend who is a superior athlete has a bad sports performance) may stem from ultimate causes (e.g., intrasexual competition for mates). These conclusions are tentative however because it is difficult to infer an ultimate cause from written narrative accounts.

Future Directions

The literature on schadenfreude is relatively scarce. Even so, this literature includes many different operational definitions of schadenfreude. For example, happiness, delight, pleasure, satisfaction, enjoyment, amusement, malicious joy, the inability to resist a smile because of

another's misfortune, a compulsion to laugh at another's misfortune, and the term "*schadenfreude*" itself (in European countries) have all been used to operationally define *schadenfreude*. Future research should address whether the experience of *schadenfreude* is a unidimensional or multi-dimensional phenomenon and whether it is accurate to use these various conceptualizations to refer to *schadenfreude*. It is possible that these studies are tapping into distinct phenomena that may have evolved to solve different adaptive problems (Koenig, Colyn, Ketelaar, 2007). Moreover, it is possible that *schadenfreude* has several sub-types (e.g., gloating), and is comprised of different kinds of positive affect. This is an issue to which future researchers should attend.

In the present research, I learned that men rated misfortunes of social embarrassment as more likely to elicit *schadenfreude* toward their same-sex friends than misfortunes of status. Future research should work on understanding what status means to college-aged males. It might be useful, for example, to directly ask a sample of college aged males what status means to them. Similarly unexpected was that men rated misfortunes of physical attractiveness as more likely to elicit *schadenfreude* toward their same-sex friends than misfortunes of status. Research by Li and Kenrick (2006) has shown that women pursuing short-term mating strategies rate physical attractiveness as a necessity in potential short-term mating partners. It is possible that the college-aged men in my sample were pursuing short-term mating strategies, thereby competing with each other on characteristics important to potential short-term mating partners, namely, physical attractiveness. Future research should examine the relationship between mating strategies and *schadenfreude*-eliciting events. Perhaps unrestricted men (as identified by the Sociosexuality Inventory; Simpson & Gangestad, 1991) are more likely than restricted men to

feel schadenfreude over misfortunes suffered by same-sex competitors that result in reductions of physical attractiveness. These questions await empirical testing.

The present research I examined freely recalled experiences of schadenfreude from participants' own lives in addition to asking participants directed questions regarding theoretically derived situations. These recalled experiences provide rich accounts of how schadenfreude is experienced by participants and allow participants to describe the events in their own words. Moreover, by asking the same participants to complete both parts of the study, I was able to identify a difference in the degree of schadenfreude reported regarding participants' actual experiences of schadenfreude ($M = 6.76$, 0 = not at all happy, 10 = very happy) and their reports regarding how likely it would be for them to experience any schadenfreude at all in response to a number of hypothetical situations ($M = 2.78$, 0 = not at all likely, 10 = very likely). This difference may be due to the hypothetical nature of the survey items. When couched in hypothetical terms, participants' responses to the survey items may have reflected, in part, their desire to think of themselves as a good person who would not likely experience schadenfreude in response to their friends' demises. This result could also stem from the events described in the narratives being more emotionally salient or bothersome to participants than the situations prompted by the survey items. A separate but related issue is that very few participants spontaneously mentioned misfortunes of physical attractiveness in their narratives. However, both men and women indicated that they would feel schadenfreude if their friends' physical attractiveness was lowered when they were specifically asked about it in the survey portion of the study. Inconsistencies such as these warrant examining schadenfreude using several different methodologies.

The present results may be generalized to college-aged individuals. Future research should examine schadenfreude experiences within other populations (e.g., families, community samples). Additionally, when thinking about the survey items participants may have had a difficult time predicting how they would feel in response to hypothetical misfortunes befalling their friends. In other words, my survey data may reflect, in part, how participants may want to appear to other people, or to themselves, rather than how they would actually feel in a particular situation. Thus, in addition to asking how likely it is that participants would feel schadenfreude in response to friends' misfortunes, future research should ask participants how likely it is that a third party (e.g., a typical male or female undergraduate) might feel schadenfreude if his/her friend experienced different types of misfortunes. This kind of comparison would allow researchers to ascertain how much the current survey responses were influenced by social desirability concerns.

Concluding Thoughts

In this paper, I conceptualized schadenfreude as a mate-value-tracking mechanism. Some results were consistent with this function. However, these findings do not conflict with ideas of other functions of schadenfreude; namely, restorations of justice (see Koenig, et al., 2007). Misfortunes of Justice Restoration were considered among the top schadenfreude-eliciting misfortunes for both men and women in same- and opposite-sex friendships. Moreover, this research demonstrates that, in spite of the overwhelmingly positive roles of friends in terms of providing social support, advice, protection, shared activities, laughter, and other benefits (see Bleske & Shackelford, 2001), people at least occasionally feel pleasure when their friends experience misfortune. Thus, this research highlights a previously undocumented dark side to friendship.

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Footnotes

1. Schadenfreude occurs when passively watching someone suffer but is not the same emotion that is experienced as when actively making someone suffer (Leach, Spears, Branscombe, & Doosje, 2003). A person would not feel *schadenfreude* if he/she caused the co-worker to make a mistake in the work presentation, but instead might be experiencing sadism.

2. Dispositional envy, which was measured at the beginning at the study, also predicted participants' envy of the student (Smith et al., 1996).

3. It is important to note that these findings were relative differences between men and women. Both men and women similarly highlighted "kind and understanding", "intelligent", "exciting personality", and "healthy" as characteristics important in a mate (see Buss, 1989).

4. In other words, participants were randomly assigned to write a same- or opposite-sex narrative. Independently of the assignment to a particular narrative condition, participants were randomly assigned to a same- or opposite-sex survey. Independent of the assignment to a particular survey condition, participants were randomly assigned to a random order of survey items (Order One), or a reverse order of the survey items (Order Two). Thus, men and women could have each been assigned to one of eight conditions (e.g., same-sex narrative, same-sex survey, survey item order one; same-sex narrative, same-sex survey, survey item order two; opposite-sex narrative, same-sex survey, survey item one).

5. I had manipulations to prevent systematic biases (e.g., order effects). However, when I explored order effects using a MANOVA, no discernable pattern emerged.

6. These data violated the assumption of homogeneity of variance. I used the corrected statistic.

7. These data violated the assumption of sphericity. I used the Greenhouse-Geisser correction.

8. These data violated the assumption of sphericity. I used the Greenhouse-Geisser correction.

Table 1

Duration of Schadenfreude

	Women rating female friends (n=92)	Men rating male friends (n=53)	Same- sex friends (n=145)	Women rating male friends (n=89)	Men rating female friends (n=51)	Opposite- sex friends (n=140)
Fleeting	14%	25%	18%	12%	24%	17%
10-15 min	12%	19%	15%	9%	12%	10%
30 min	5%	6%	6%	8%	4%	7%
1 hour	10%	6%	8%	7%	2%	5%
Several hours	5%	13%	8%	10%	8%	9%
Entire day	10%	9%	10%	10%	14%	12%
Several days	24%	11%	19%	26%	24%	25%
More than a week	18%	11%	16%	17%	14%	16%

Table 2

Coding Results of Narrative Data

	Women rating female friends (n=92)	Men rating male friends (n=53)	Same- sex friends (n=145)	Women rating male friends (n=89)	Men rating female friends (n=51)	Opposite- sex friends (n=140)
Mating related themes:	(10%)	(10%)	(10%)	(17%)	(24%)	(19%)
Competition for a mate	3%	6%	4%	0%	0%	0%
Mating- related gain	2%	4%	3%	7%	8%	7%
Mating- related rejected/ betrayed, friend had misfortune	5%	0%	3%	10%	16%	12%
Non-mating related themes:	(43%)	(32%)	(39%)	(24%)	(24%)	(23%)
Competition in sports, work, school	26%	28%	27%	8%	18%	11%

Non-mating related gain	12%	2%	8%	15%	4%	11%
Non-mating related rejected/ betrayed, friend had misfortune	5%	2%	4%	1%	2%	1%
Justice related themes:	<i>(30%)</i>	<i>(21%)</i>	<i>(26%)</i>	<i>(23%)</i>	<i>(20%)</i>	<i>(22%)</i>
Got what s/he deserved	23%	19%	21%	18%	20%	19%
Didn't show support when it happened to me, then it happened to them	7%	2%	5%	5%	0%	3%
Target related themes:	<i>(23%)</i>	<i>(10%)</i>	<i>(19%)</i>	<i>(12%)</i>	<i>(16%)</i>	<i>(14%)</i>
S/he had everything	4%	4%	4%	1%	6%	3%
S/he felt better than me/every- one	10%	4%	8%	0%	2%	1%

S/he felt above the law/could get away with anything	1%	0%	1%	2%	4%	3%
Envious or jealous of friend or friend's relationship	8%	2%	6%	9%	4%	7%
Altruistic Schadenfreude:	(4%)	(17%)	(9%)	(10%)	(14%)	(11%)
Misfortune was good for friend in long run	4%	17%	9%	10%	14%	11%
**mating-related	2%	6%	3%	5%	8%	6%
**non-mating related	2%	11%	6%	6%	6%	6%
Motive unclear/vague description	1%	15%	6%	18%	12%	16%
Other	12%	8%	10%	7%	10%	8%

Table 3.

A principal components factor analysis with a promax rotation yielded five factors.

<u>Social Embarrassment</u>	<u>Justice Restoration</u>	<u>Devalued Mating Reputation</u>	<u>Physical Attractiveness</u>	<u>Status</u>
Got a really bad hair cut (.88)	Caught by professor cheating on test (.91)	Contracted an STD (.75)	Developed an acne breakout (.80)	Injured during a sporting event (.80)
Tripped in front of group of opposite sex (.88)	Got in trouble with boss for being consistently late to work (.90)	Rumor was spread about sexual promiscuity (.70)	Gained weight (.77)	Missed a big play during a sports game (.76)
Had food in teeth while talking to a group (.82)	Caught cheating on boy/girlfriend (.75)	Dumped by boy/girlfriend (.62)	Developed wrinkles (.60)	Was beaten up in a fight (.48)
Had a coffee stain on shirt in public (.80)	Caught exaggerating story (.62)			
Noticed grey hair (.61)	Lost money gambling (.59)			
Lost sports bet (.59)	Arrested for fighting while drunk (.56)			
	Received a ticket for underage alcohol possession (.46)			

Table 4

Events That Elicit the Most and Least Amount of Schadenfreude Among Same-Sex Friends

<u>Women</u>		<u>Men</u>	
Misfortunes	<i>M</i> (<i>SD</i>)	Misfortunes	<i>M</i> (<i>SD</i>)
1. Caught cheating on boyfriend	5.30 (3.41)	1. Tripped in front of group of the opposite sex	5.32 (3.33)
2. Caught exaggerating a story	4.99 (3.23)	2. Got a really bad haircut	4.82 (2.94)
3. Gained a noticeable amount of weight	4.47 (3.30)	3. Caught exaggerating a story	4.79 (3.05)
4. Tripped in front of group of the opposite sex	4.00 (3.22)	4. Sexual advance was rejected	4.47 (3.13)
5. Sexual advance was rejected	3.67 (2.87)	5. Caught cheating on girlfriend	4.07 (3.34)
19. Developed wrinkles	2.10 (2.51)	19. Missed a big sports play	1.72 (2.03)
20. Had a coffee stain on shirt in public	1.93 (2.50)	20. Developed wrinkles	1.71 (2.41)
21. Contracted an STD	1.34 (2.08)	21. Was beaten up in a fight	1.55 (2.46)
22. Was beaten up in a fight	0.98 (1.65)	22. Contracted an STD	0.95 (2.07)
23. Injured during sporting event	0.81 (1.55)	23. Injured during sporting event	0.82 (1.49)

Table 5.

Mean Rank Order of Scales Among Same-Sex Friends

<u>Women</u>				<u>Men</u>			
Rank	Scale	<i>M</i>	(<i>SD</i>)	Rank	Scale	<i>M</i>	(<i>SD</i>)
1.	Justice Restoration ^a	3.81	(2.16)	1.	Social Embarrassment ^e	3.86	(2.34)
2.	Physical Appearance ^b	3.18	(2.55)	2.	Justice Restoration ^e	3.40	(1.87)
3.	Social Embarrassment ^b	2.88	(2.14)	3.	Physical Appearance ^f	2.10	(2.14)
4.	Devalued Mating Reputation ^c	1.98	(2.01)	4.	Devalued Mating Reputation ^f	1.85	(1.73)
5.	Status ^d	1.33	(1.51)	5.	Status ^f	1.40	(1.45)

Note. Superscript denotes which scales are significantly different from each other.

Table 6

Events That Elicit the Most and Least Amount of Schadenfreude Among Opposite-Sex Friends

<u>Women</u>		<u>Men</u>	
Misfortunes	<i>M</i> (<i>SD</i>)	Misfortunes	<i>M</i> (<i>SD</i>)
1. Caught exaggerating a story	4.86 (3.20)	1. Caught exaggerating a story	5.07 (3.07)
2. Caught cheating on girlfriend	4.51 (3.85)	2. Caught cheating on boyfriend	5.00 (3.71)
3. Tripped in front of group of opposite sex	4.04 (3.44)	3. Sexual advance was rejected	4.37 (3.22)
4. Sexual advance was rejected	3.87 (3.08)	4. Tripped in front of group of the opposite sex	4.15 (3.20)
5. Lost money gambling	3.54 (3.07)	5. Lost a sports bet	3.76 (3.29)
19. Contracted an STD	1.25 (2.27)	19. Developed an acne breakout	1.75 (2.11)
20. Developed an acne breakout	1.23 (1.75)	20. Developed wrinkles	1.61 (2.13)
21. Developed wrinkles	1.22 (1.62)	21. Was beaten up in a fight	1.15 (2.16)
22. Was beaten up in a fight	1.16 (1.99)	22. Injured during sporting event	1.10 (2.00)
23. Injured during sporting event	0.63 (1.13)	23. Contracted an STD	1.05 (2.06)

Table 7.

Mean Rank Order of Scales Among Opposite-Sex Friends

<u>Women</u>				<u>Men</u>			
Rank	Scale	<i>M</i>	(<i>SD</i>)	Rank	Scale	<i>M</i>	(<i>SD</i>)
1.	Justice Restoration ^a	3.52	(2.47)	1.	Justice Restoration ^f	3.77	(2.44)
2.	Social Embarrassment ^b	2.85	(2.26)	2.	Social Embarrassment ^f	3.45	(2.39)
3.	Devalued Mating Reputation ^c	1.81	(1.78)	3.	Devalued Mating Reputation ^g	1.93	(2.20)
4.	Physical Appearance ^d	1.40	(1.68)	4.	Physical Appearance ^g	1.80	(1.93)
5.	Status ^e	1.04	(1.42)	5.	Status ^h	1.38	(1.79)

Note. Superscript denotes which scales are significantly different from each other.

Appendix A

Friendship

Friendships involve a lot of different emotions. You might feel a sense of liking or love toward your friends. Sometimes when conflicts arise you might feel hurt or be angry with your friends. If something good happens to one of your friends you might share in his or her happiness. If something bad happens to one of your friends you might feel sympathy or sadness.

However, relationships between people can be complex and involve complex emotions. Sometimes, even if we would rather not admit it, we might experience a small degree of pleasure when something bad happens to one of our friends.

Previous research shows that this temporary feeling of pleasure in another's misfortune or suffering is very common. And, feeling it does not mean that you don't care about your friend. These are very normal feelings.

In this study, we are interested in finding out what specific events might lead people to experience this feeling of pleasure in response to another's misfortune. And we are looking specifically at what kinds of events cause this feeling to occur between friends.

Part I

Take a few moments to try to think back on a time when something bad happened to one of your opposite-sex (same-sex) friends and you felt even a brief and temporary moment of pleasure upon hearing or seeing what had happened to your friend.

Thus, if you are female you will think about something bad that happened to a male (female) friend that made you feel even a little bit happy. If you are male you will think about something bad that happened to a female (male) friend that made you feel even a little bit happy.

Please put the initials of your friend on the following line. _____

On the following lines, we would like you to describe in as much detail as possible what happened to your friend that caused you to feel pleasure in response to their misfortune.

[illegible]

Part I (continued)

1. Is the friend you just wrote about male or female? Circle One:

Male

Female

2. Approximately how long have you known this friend? _____ years /months

3. How close were you with this friend **at the time of the incident** that you wrote about?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at Very close
all close

4. How happy were you when this misfortune happened to your friend?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at Very Happy
all happy

5. In general, to what extent do you envy this friend?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at Very Much
all

6. In general, to what extent do you feel jealousy toward this friend?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at Very Much
All

7. How long did your feeling of happiness in response to your friend's misfortune last? (check one)

_____ A fleeting moment

_____ Several hours

_____ Approximately 10 or 15 minutes

_____ An entire day

_____ Approximately half an hour

_____ Several days

_____ Approximately one hour

_____ More than a week

Part II

INSTRUCTIONS: Now that you have described a situation involving a specific friend, we would like to ask some questions about your feelings towards your **MALE (FEMALE) FRIENDS** in general.

Please consider the following scenarios regarding any *male friend*. Answer each item as honestly as possible. There are no right or wrong answers.

1.) Imagine that a male (female) friend gained a noticeable amount of weight.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

2.) Imagine that a male (female) friend had an acne breakout on his face.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

3.) Imagine that a male (female) friend was beat up in a physical fight.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

4.) Imagine that a male (female) friend was arrested for fighting while he was drunk.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

5.) Imagine that a male (female) friend was caught by a professor cheating on a test.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

6.) Imagine that a male (female) friend got in trouble with his boss for being consistently late to work.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

7.) Imagine that a male (female) friend was caught cheating on his girlfriend.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

8.) Imagine that a male (female) friend was seen in public with a big coffee stain on his shirt.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

9.) Imagine that a male (female) friend got injured while participating in a sporting event.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

10.) Imagine that a rumor was spread that a male (female) friend has sex with a lot of people.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

11.) Imagine that a male (female) friend lost money while gambling.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

12.) Imagine that a male (female) friend was caught exaggerating a story.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

13.) Imagine that a male (female) friend tripped and fell in front of a group of women.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

14.) Imagine that a male (female) friend was dumped by his girlfriend.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

15.) Imagine that a male (female) friend got a ticket for underage alcohol possession.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

16.) Imagine that a male (female) friend developed noticeable wrinkles on his face.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

17.) Imagine that a male (female) friend started noticing that he had grey hair.
How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

18.) Imagine that a male (female) friend had a sexual advance rejected by a woman he was interested in.

How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

19.) Imagine that a male (female) friend got a really bad hair cut.

How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

20.) Imagine that a male (female) friend lost a sports bet.

How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

21.) Imagine that a male (female) friend contracted a sexually transmitted disease.

How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

22.) Imagine that a male (female) friend had food in his teeth while talking to a group of people.

How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

23.) Imagine that a male (female) friend missed a big play in a sports game.

How likely is it that this would make you feel at least a moment of pleasure?

0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10
Not at all likely Very likely

Demographics

Your Sex (circle one): Male Female

Your Age (in years): _____

Year in school (check one):

- _____ Freshman
- _____ Sophomore
- _____ Junior
- _____ Senior
- _____ Other _____

What is your ethnicity? Check all that apply.

- _____ Asian
- _____ African American
- _____ Caucasian/White
- _____ Native American/American Indian
- _____ Hispanic
- _____ Pacific Islander
- _____ Bi/multi-racial
- _____ Other _____

What is your relationship status? Check all that apply.

- _____ Not dating
- _____ Casual dating
- _____ Exclusive dating
- _____ Engaged
- _____ Cohabitating
- _____ Other _____

Appendix B



Bowling Green State University

Department of Psychology
Bowling Green, OH 43403-0228
Phone: (419) 372-2301
FAX: (419) 372-6013

Web Page: <http://www.bgsu.edu/departments/psych/>

FEELINGS TOWARD FRIENDS II

Spring 2006

Thank you for participating in this study!

We designed this study to examine the feeling of pleasure when something bad happens to a friend. Friendships provide us with many benefits such as social support, protection, advice, help, and favors. However, friends may also be our rivals in certain contexts. In this research, we were specifically interested in whether people more often feel pleasure at their friends' misfortunes because they might be directly or indirectly competing with their friends for mates.

This research is important in that the results help researchers to better understand the dynamics and evolutionary influences on friendships and social groups.

- If you are interested in learning more about this topic, you may wish to read:

Feather, N. T. (1994). Attitudes toward high achievers and reaction to their fall: Theory and research concerning tall poppies, in Zanna, M. P. (Ed) *Advances in Experimental Social Psychology*, 26, 1-73.

Shackelford, T. K. & Buss, D. M. (1996). Betrayal in mateships, friendships, and coalitions. *Personality and Social Psychological Bulletin*, 11, 1151-1164.

- If you are interested in learning the results of this study when they are available or have any questions about this research, please contact:

Leisha A. Colyn
126 Psychology
(419) 372-8238

Appendix C

Participant Number _____

Coder _____

Mating-related Themes:

Competition for a mate: _____

-target “stole boyfriend” and then experienced a misfortune

Writer experienced a mating-related gain from target’s misfortune: _____

-he broke up with her, so then I could date her

Writer was rejected or betrayed by target & then target experienced a misfortune: _____

-he broke up with me, then something bad happened to him

-friend dated my ex-boyfriend, which you are not supposed to do, and then...

Non-mating-related Themes:

Competition in sports, work, school/academics: _____

-he got injured and couldn’t play baseball so I got his position

Writer experienced a non-mating-related gain from target’s misfortune: _____

-I gained more time with my friend after my friend’s break-up

Writer was rejected or betrayed by target & then target experienced a misfortune: _____

-he spent the rent money I gave her on beer and then her parents stopped giving her money

Justice –related Themes:

Target got what he/she deserved: _____

-her boyfriend broke up with her because she cheated on him . . . so she got what she deserved

-she was being mean to people, so I thought her misfortune was funny

Target didn’t show support when a misfortune happened to writer, and then later experienced the

same or similar misfortune: _____

-when my grandmother died my friend acted like it wasn’t a big deal so later when her grandmother died she could now know what I had gone through

Target-related Themes:

Target described as having everything: _____

- her parents always gave her everything

Target described as feeling like he/she is better than me/everyone: _____

-he was always bragging about himself

Target described as feeling he/she was above the law/could get away with anything:

_____ -he was always drinking and driving and felt like he would never get caught

Writer was envious or jealous of target or target's relationship: _____

-I guess I was jealous of her relationship, appearance, money, etc.

Altruistic Schadenfreude

Writer believed that the target's misfortune was good for the target in long-run: _____

mating-related: _____

-Her boyfriend broke up with her, which upset her, but he wasn't good for her anyway

non-mating-related: _____

-he got caught with drugs and I was happy because he had a problem and this was a wake-up call that he had to stop

Miscellaneous:

Motive unclear/vague description: _____

-she had a little accident while in school and I thought it was funny

Other: _____

Please explain.
