

Schadenfreude and Decisions

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Abstract

Schadenfreude is the pleasure derived from another person's misfortune, and several antecedents for schadenfreude has been identified, such as envy, self-enhancement, and deservingness. However, little is known about the effect of feeling schadenfreude on subsequent decisions. The present thesis investigates in four studies the effect of schadenfreude on decisions, which aimed at extending the previous research of Kramer, Yucel-Aybat, and Lau-Gesk (2011). It was expected that participants feeling schadenfreude would choose more conventional options compared to controls because the feeling of schadenfreude informs people of the possibility that a misfortune can befall them. Schadenfreude was induced either through a video clip chosen based on the results from the pre-test (Study 1 and 2) or through an affective priming task (Study 3 and 4). The decision tasks were the ultimatum game (Study 1 and 2), an economic version of the Asian disease problem (Study 3), and a consumer choice task involving compromise and extreme options (Study 4). Study 1 through 3 showed no effect of schadenfreude on decisions. However, Study 4 showed that schadenfreude increased the choice of unconventional (i.e., extreme) options ($p = .037$), which is the opposite of the predicted effect. These results are discussed in relation to the importance of replication studies and future studies.

Summary

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Title of Thesis: Schadenfreude and Decisions

Schadenfreude is the pleasure at another's misfortune. This emotion has gotten considerable attention from researchers over the past two decades. However, these researchers have mainly been interested in understanding how other's misfortunes can evoke feelings of schadenfreude. Considering that schadenfreude is an emotion that one feels because of another person's actions, an investigation of how schadenfreude affects behaviour would be interesting. The present thesis investigates how schadenfreude affects decisions, and it was predicted that schadenfreude would make participants choose conventional options, instead of unconventional options due to fear of unfavourable outcomes.

Study 1 and 2 investigated the effect of schadenfreude on the ultimatum game. Participants were students at the University of Oslo (Study 1) and workers on Amazon Mechanical Turk (Study 2), and they saw either a neutral video or a video that elicited schadenfreude. Afterwards, a one-shot ultimatum game was played where all participants were given the role of the proposer and allocated money.

Study 3 investigated the effect of schadenfreude on the choice of safe or risky gambles that were either framed as gains or losses. Participants were undergraduate psychology students at the University of Oslo, and were induced to feel schadenfreude or calm through an affective priming task. Afterwards, participants were asked to choose between a risky or safe option, which was framed in terms of either gains or losses.

Lastly, Study 4 investigated the effect of schadenfreude on the choice of compromise or extreme consumer options. Participants were Amazon Mechanical Turk workers, and they were induced to feel happy or schadenfreude through an affective priming task. Afterwards, participants were presented with two extreme options, which involved a trade-off between two attributes, and a compromise option, and were asked to choose one of these.

The results from Study 1 through 3 were non-significant. However, Study 4 found that participants in the schadenfreude condition chose more extreme options than participants in the happy condition, which is the opposite of our prediction as extreme options are unconventional.

The present thesis was an independent research project and the author collected the data.

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Schadenfreude and Decisions

Apple, a highly successful electronics company, and with such brand loyalty that Apple consumers are often compared to a cult (Riley & Boome, 2011), released a new mobile phone in September 2014. As expected, people flooded to Apple stores all over the world to get their hands on the iPhone 6 or iPhone 6 Plus (Nicks, 2014). However, just few days after the release, iPhone 6 Plus owners were complaining that the phone bends when carried in pockets (Lee & O’Callaghan, 2014). This led to competing companies making fun of Apple on Twitter for what has been dubbed the “bend gate scandal”. For example, Samsung (2014) advertised their new phone by writing, “Curved. Not bent”. Following suit, LG (2014) wrote, “Our phone doesn’t bend, it flexes... on purpose”. Lastly, HTC (2014), not sparing on the insults, wrote, “Designed to withstand the most demanding environments. Like your pockets”.

The Twitter messages clearly show that Samsung and other companies were quite delighted by Apple’s mishap. They felt *schadenfreude*, which is the pleasure at the misfortune of others (Oxford Dictionaries). Schadenfreude receives considerable press-coverage, and research on the antecedent triggers of schadenfreude has been substantial. However, little research has focused on the consequences of schadenfreude: Will experiencing schadenfreude towards Apple affect future decisions in Samsung, LG, and HTC?

A previous study by Kramer, Yucel-Aybat, & Lau-Gesk (2011) investigated how schadenfreude affects the choice of conventional versus unconventional options. They found that participants who were induced to feel schadenfreude chose lower-risk conventional options. This was argued to be because schadenfreude leads to the anticipation of unfavourable outcomes, which makes participants choose options that are less likely followed by negative outcomes.

Therefore, the present thesis will further look at how schadenfreude affects behaviour in three different types of decision-tasks: The allocation of money in ultimatum games, the choice of risky versus safe options, and the choice of compromise versus extreme consumer options. Based on Kramer et al.’s (2011) results, the hypothesis is that the experience of schadenfreude will increase the choice of conventional options in these decision tasks. Conventional options are regarded as the safe option in gambles, the compromise option in consumer choices, and fair (i.e., 50% of the total) allocations in the ultimatum game.

In order to understand how *schadenfreude* can affect decisions, a review of the *schadenfreude* literature, and a discussion on how *schadenfreude* can be used as information in decisions will be presented. Lastly, predictions of the effect of *schadenfreude* on decision tasks will be presented by discussing what constitutes a conventional choice.

Schadenfreude

Another person's misfortune can evoke feelings of anger or sympathy, but the same event can also evoke *schadenfreude* (Feather, 2006). How can this same event evoke two very different emotions? According to appraisal theory, emotional responses are evoked through the individual's appraisal of an event (Roseman & Smith, 2001). Therefore, for someone's misfortune to evoke *schadenfreude*, this should be appraised as being beneficial for the *schadenfroh* person (Frijda, 1988). Three concerns on how another person's misfortune can be beneficial have received empirical support: deservingness of the unfortunate outcome, the opportunity to self-enhance from other people's unfortunate events, and prior envy felt towards the unfortunate other.

Deservingness. Another person's misfortune can be seen as beneficial if this misfortune is seen as deserved, which then indicates a form of justice being served (Portmann, 2000). To judge an outcome as deserved or undeserved is related to the actions that lead to the outcome. A negative outcome is deserved if it was due to a negative prior action (Feather, 1999). For example, a person who does not put much effort into writing an application and comes unprepared for a job interview, is seen as deserving of the negative outcome, which is to not get the job (Feather, McKee, & Bekker, 2011). In addition, personal responsibility of the outcome increases judgements of deservingness, which then leads to feelings of *schadenfreude* (Van Dijk, Ouwerkerk, Goslinga, & Nieweg, 2005).

The perceived deservingness of an outcome can also be influenced by the likeableness and moral character of the unfortunate person. Participants experienced more *schadenfreude* and rated the misfortune as more deserved when an unlikeable stimulus person suffered a misfortune, compared to when a likeable stimulus person experienced a misfortune (Hareli & Weiner, 2002). The moral character of a person affects the likableness of this person (Feather & Deverson, 2000). A study looked at the deservingness of punishment for an offence (child abuse or arson) committed by a person who was perceived as either having a strong or weak moral character (Feather & Atchison, 1998). The offenders who were judged to be more decent, reliable, worthy, and respectable (which together constitutes moral character) were judged to deserve the punishment less, and were less responsible for the offense. Moral

people are seen as less likely to bring about a negative event that leads to a negative outcome (Feather, 2014). However, people with weak moral characters such as hypocrites are more likely to act in a negative way (Powell & Smith, 2013).

An outcome that is seen as undeserved can also lead to feelings of schadenfreude. A person's undeserved positive outcome can lead to feelings of resentment, which then leads to feelings of schadenfreude when that person suffers a failure. Participants were asked to take the role of a low, average, or high performing student. They were then asked to judge a misfortune that befell a high achieving student who did not put much effort into his course work (Feather, 2008). Low performing participants felt the most resentment and schadenfreude towards the high achieving student. These results corroborate with the "tall poppy syndrome" seen in Australia (Feather, 1994) and Janteloven seen in Scandinavian countries (Bonde, 2009), which is the assertion that people who hold high-status positions should not think highly of themselves, and that people often wish to cut these high-status people down to size.

Self-enhancement. Another way other's misfortunes can be beneficial for the schadenfroher person is by providing self-enhancement opportunities through downward social comparisons (Willis, 1981). Self-enhancement motivations increase when one's self-evaluation is threatened, or for people with lower self-esteem (Aspinwall & Taylor, 1993). Therefore, studies have looked at the relation between levels of self-esteem and self-evaluation threat on levels of schadenfreude. One study looked at the effect participants' self-esteem has on experiences of schadenfreude (Van Dijk, Van Koningsbruggen, Ouwerkerk, & Wesseling, 2011). Low self-esteem participants experienced more schadenfreude when they read a story about a high achieving student who experienced a setback in his studies, compared to high self-esteem participants. Another study examined the combined effect of self-esteem and self-evaluation threat on experienced schadenfreude (Van Dijk, Ouwerkerk, Van Koningsbruggen, & Wesseling, 2012). Self-evaluation threat was manipulated by giving participants negative or positive feedback on a task. Participants then saw a video of a failed audition for a Dutch talent show, and responded to how much schadenfreude they felt. Participants with low self-esteem felt more schadenfreude after they had received negative feedback, compared to low self-esteem participants who received positive feedback. However, schadenfreude scores did not differ between high self-esteem participants who received negative or positive feedback (Van Dijk et al., 2012).

Schadenfreude due to self-evaluation threat can also occur on the group-level. University of Amsterdam students were made to feel inferior because their in-group had done

badly at an interuniversity quiz competition (Leach & Spears, 2008). Their out-group, the VU University Amsterdam, was successful in the quiz competition. However, in the finals, the VU University Amsterdam lost. Students reported feeling *schadenfreude* due to their out-groups failure, where *schadenfreude* provides self-enhancement for members of inferior groups (Van Dijk, Ouwerkerk, Wesseling, & Van Koningsbruggen, 2011).

Envy. Lastly, another person's misfortune is beneficial to the envious *schadenfroh* person because the misfortunate other is no longer in a higher position (Smith, Thielke, & Powell, 2014). However, research on envy being an antecedent to *schadenfreude* has produced inconsistent results, where some studies has found a relationship between envy and *schadenfreude* (Smith et al., 1996; Takahashi et al., 2009; Van Dijk et al., 2005), and other studies has not (Feather & Sherman, 2002; Hareli & Weiner, 2002; Leach & Spears, 2008). The discrepancy in these studies is argued to be due to definitional challenges in regards to envy (Smith et al., 2014). Previous studies have not distinguished between two forms of envy, namely malicious and begin envy. A definition of these two forms of envy is given by Parrott & Smith (1993) where "envy arises when a person lacks another's superior quality, achievement, or possession and either desires it or wishes that the other lacks it" (p. 908). Therefore, malicious envy makes people want to pull down superior others, while begin envy makes people want to pull themselves up to the same level as the superior others (Van de Ven, Zeelenberg, & Pieters, 2009). It is argued that studies failing to find a link between envy and *schadenfreude* has investigated begin, and not malicious, envy (Powell, Smith, & Schurtz, 2008).

Combining *schadenfreude* research into one model. The three research areas of *schadenfreude* have been studied separately over the past years. However, efforts are made to merge these areas into one model of *schadenfreude*. A vignette study was conducted that incorporated all of the aforementioned variables into one structural model (Feather, Wenzel, and McKee, 2013). This model shows that deservingness is an important antecedent trigger of *schadenfreude*. The effect of deservingness of the outcome to feelings of *schadenfreude* is shown to be mediated through inferiority, resentment, and begin envy. Therefore, successful people who do not deserve their success are resented, which then leads to people thinking that their misfortunes are deserved when they suffer a misfortune, leading to higher feelings of *schadenfreude*. In addition, participants who reported higher levels of inferiority felt more resentment. However, begin envy was felt towards people who deserved their success and their failures were not seen as deserved, which lead to feelings of sympathy towards their failures. Other paths showed that people with low self-esteem felt more inferior which lead to

higher feelings of resentment and malicious envy, which ultimately lead to feelings of schadenfreude.

Therefore, these results integrate the previously separate research areas of schadenfreude into one model. This model shows that schadenfreude is a complex emotion where many appraisals are needed for one to feel schadenfreude. However, it seems that the deservingness of the unfortunate outcome is an important antecedent trigger of schadenfreude.

The research on schadenfreude has mainly focused on what kinds of appraisals people make of other's misfortunes when they feel schadenfreude, as seen in this review of literature. However, little research has been done on how schadenfreude can affect decisions. To our knowledge, there is only one study published on the effect of schadenfreude on decisions (i.e., Kramer et al., 2011). Therefore, in the next sections, a discussion of how schadenfreude can affect decisions will be discussed. First, a discussion on the informational value emotions has on decisions and judgements will be presented.

Feelings as Information

Feelings can serve as a source of information when making judgements. The feelings as information theory accounts for how moods, emotions, metacognitive experiences and bodily sensations influence judgement (Schwarz, 2010). An important distinction to make is between emotion and mood. Moods are emotional states that last for an extended period of time and lack a clear referent (Morris, 1989). Emotions, on the other hand, have an identifiable referent, are higher in intensity than moods, and last for shorter time periods. The difference in referents is incorporated in the English language as people say that one is *in* a bad mood, but one is angry *about* something (Schwarz & Clore, 2007). As the present thesis focus on the emotion schadenfreude, the discussion will focus mainly on how *emotions* serve as information in judgement tasks.

Emotions arise from appraisals (i.e., evaluations) of situations or events (Roseman & Smith, 2001). Put differently, emotions arise from how its referents are evaluated. According to the feeling as information theory, these appraisals are used as information in judgement tasks (Schwarz, 2010). So schadenfreude is evoked from situations where someone's misfortune is appraised by the schadenfroh person as being beneficial for him or her (Frijda, 1988). Such as seeing people fall from a seemingly undeserved high position (Feather, 2014), or to enhance one's self-esteem (Van Dijk & Ouwerkerk, 2014).

The appraisals of *schadenfreude* are then used in answering the question “how do I feel about it?” when using emotions as information in a judgement task (Schwarz & Clore, 1988). Such as any other information source used in judgements, it follows the same rules (Schwarz, 2010). The first rule is that the emotion must have some informational value to the task at hand (Schwarz & Clore, 1983). The literature distinguishes between integral emotions, which are elicited by the task at hand, and incidental emotions, which are present at the time (Schwarz & Clore, 2007). In order for the emotion to have informational value, it must be perceived as integral. However, these types of emotions are difficult to disentangle because people are not good at locating the source of their emotions, which makes people assume that all emotions are integral. Because of this, feeling as information experiments usually rely on the induction of incidental emotions. In order for the manipulation to be successful, the source of the emotion must not be disclosed (Schwarz & Clore, 1983).

Second, the use of emotions as information increases when the emotions are relevant to the task at hand. Conversely, the impact of emotions in judgement tasks decreases when other more relevant sources of information are present. For example, an experiment assessing the effect of mood on liking of political candidates, Ottati and Isbell (1996) found that participants with expertise in politics were not affected by the mood manipulation in their evaluative judgements. Third, the use of emotions as information is pronounced in situations with limited processing capacity. By manipulating processing capacity with time constraints and an additional memory task, Siemer and Reisenzein (1998) found that participants low on processing capacity relied more on their mood when judging their life satisfaction. Lastly, the same emotion can affect judgements in different ways based on the question being asked. Happy and sad participants were asked whether they were satisfied with their progress in a task. Happy participants inferred that they were satisfied and terminated the task; sad participants were not satisfied and continued with the task. However, when they were asked whether they enjoyed a task, happy participants continued with the task, while sad participants terminated the task (Martin, Ward, Achée, & Wyer, 1993).

What kind of information does the emotion *schadenfreude* provide in judgement tasks? The research in this area has not been extensive. However, one study found that *schadenfreude* towards other’s misfortunes provides information about the possibility that the misfortune can happen to oneself (Kramer et al., 2011). Therefore, it is thought that participants appraised another person’s unfortunate event as satisfying because the other person deserved it. This appraisal of deservingness informed participants that the misfortune that had happened to someone else could also happen to them if they are not careful. With

this information in mind, participants then chose an option that was least likely to produce unfortunate outcomes, i.e., a conventional option. In Kramer et al.'s Study 1 (2011) it was a pair of binoculars with average magnification and weight that was chosen, instead of binoculars with either high magnification or light weight. In Kramer et al.'s Study 3 (2011) it was the choice of a sure gain of \$30 instead of a risky option (10% probability to gain \$750). Therefore, it seems that *schadenfreude*, the emotion that signals pleasure from other's misfortunes, prevents people from making decisions that make them the subject of *schadenfreude*. Extrapolating from this study, the present thesis will investigate whether *schadenfreude* will affect decision-makers to choose conventional options in the ultimatum game and in risky gambles. A discussion of what constitutes a conventional option is presented next.

Conventional and Unconventional Options

Conventional and unconventional options have many different characteristics. As mentioned in the previous section, a conventional option can be characterised as a middle option compared to the other options in the choice set. These are often called compromise options because one does not need to give up one attribute, such as magnification or weight, over another when making a decision (Simonson, 1989). Compromise options are often chosen because people place more emphasis on the disadvantages, than on the advantages, of extreme (unconventional) options (Simonson & Tversky, 1992). Because of this, unconventional options are easier to criticize (Kramer, Maimaran, & Simonson, 2012). In addition, participants who are held accountable for their decisions (Simonson & Nowlis, 2000), and participants who anticipate evaluation of their choices (Maimaran & Simonson, 2011) are more likely to choose compromise options. This is consistent with the predictions from Kramer et al.'s (2011) study where participants in the *schadenfreude* condition were attentive to the possibility of experiencing an unfortunate outcome, making them choose the compromise option. By choosing the compromise (conventional) option, they are less likely to be criticized and seen as less deserving of a potential unfortunate outcome because of their choice.

However, conventional options are not only options that involve a compromise. Other characteristics of conventional options are that they are chosen by the majority (Maimaran & Simonson, 2011). This might be because conventional options tend to satisfy lower-level needs (Maslow, 1970) and evoke less guilt (Keinan & Kivetz, 2008), which make them more consistent with social norms. In addition, conventional options have least perceived risk.

Therefore, when choosing between gambles that differ in risk, most people choose the gamble with no risk involved over the risky gamble (Simonson, Kramer, & Young, 2004).

Ultimatum Game

Knowing the characteristics of conventional options, what is a conventional decision in the ultimatum game? First of all, an ultimatum game is a bargaining game between two participants, who are given the roles of a proposer and a responder. The proposer's task is to divide a sum of money, such as \$10, to the responder. The responder chooses to either accept or reject the division. If the division is accepted, both participants will receive the suggested allocation of money. However, if the responder chooses to reject the money, both participants will leave empty-handed (Güth, Schmittberger, & Schwarze, 1982).

According to game theory, the players should act in a way that maximises value. Consequently, a conventional decision for the responder is to accept every offer. Similarly, a conventional decision for the proposer, according to game theory, is to allocate the smallest amount of money to the responder (Hardman, 2009). However, studies have shown that the majority of people do not make these decisions. A review of "one-shot" (i.e., one round) ultimatum games played around the world shows that the modal offer is 40-50% and the mean offer is 30-40% of the total. Offers below 20% of the total sum of money are rejected half the time, and offers of 40-50% are mostly accepted (Camerer, 2003). Therefore, it seems like the conventional decision for the proposer is to allocate half of the total amount of money, and not the smallest amount possible. The present thesis will focus on the decisions of proposers, and not responders. This is because *schadenfreude* is thought to increase decision-makers' attention towards the consequences of their choices, and the proposer's decisions face immediate consequences in the ultimatum game.

The fair allocation of money by the proposers is explained by their aversion to inequality (Fehr & Schmidt, 1999). Unfair allocations evoke more guilt in proposers (Ketelaar & Au, 2003), which makes them willing to give more to responders in order to create equitable outcomes in the ultimatum game (Fehr & Schmidt, 1999). However, the norm of fairness might not be the only reason proposers allocate 40-50% of the total amount. When responders do not have the opportunity to reject offers (e.g., in dictator games, Kahneman, Knetsch, & Thaler, 1986) proposers allocated 24% of the total amount to responders (Forsythe, Horowitz, Savin, & Sefton, 1994). Therefore, the fair allocations in ultimatum games are not only due to fairness norms, but also due to strategic concerns where proposers anticipate responders' reactions to unfair offers and therefore give fair offers (Wells & Rand,

2012). For example, in an alternative ultimatum game, responders were given 30 cents no matter the outcome. However, only proposers knew this and when allocating the money, they still gave 50% of the total (i.e., 15 cents). This shows that proposers are motivated by strategic self-interest when allocating the money fairly, i.e., if they don't allocate the money fairly, they risk not getting any money (Wells & Rand, 2012).

Fair allocation in the ultimatum game can thus be seen as the conventional option because it is seen as the norm (Fehr & Schmidt, 1999), is selected by the majority (Camerer, 2003), and is seen as the option that has the least perceived risk of being rejected (Wells & Rand, 2012). Therefore, the emotion *schadenfreude* is expected to make proposers allocate more fairly in the ultimatum game.

Risky Gambles and Framing

The absence of risk involved in the conventional options has been the main focus of discussion for the two previous decision tasks. However, when it comes to risky gambles, a conventional option is not necessarily the option with the lowest risk. How can a risky option be perceived as a conventional option and how can the information provided by *schadenfreude* affect decision-makers to choose risky options?

Risky options are often chosen when these are framed in terms of losses. Consider this gamble: “Option A: Sure loss of \$750. Option B: 75% chance to lose \$1000 and 25% chance to lose nothing” (p. 454 Tversky & Kahneman, 1981). Most of the participants chose option B where participants had a chance of not losing anything, however there was also a chance that they could lose more than if they had chosen option A. According to prospect theory (Kahneman & Tversky, 1979), this is because people are sensitive to losses and overweigh high probabilities, but underweigh middle probabilities. Therefore, the probability of .75 to lose \$1000 has the lowest perceived loss of value, making this option more attractive than the sure loss of \$750. On the other hand, when gambles are framed in terms of gains, prospect theory predicts that most decision-makers will choose the safe option. Consider the same gamble, but framed in terms of gains: Option A: Sure gain of \$250. Option B: 25% probability to gain \$1000 and 75% probability to not gain anything. The majority chooses option A because decision-makers are averse of the possibility to losses, and in option B there is a possibility of a loss, making option A the most attractive option. These types of gambles are often referred as economic versions of the Asian disease problem because these are economic adaptations of the original framing problem, called Asian disease problem (Tversky & Kahneman, 1981).

Kramer et al. (2011, Study 3) has shown that schadenfreude induced participants chose the safe (conventional) option in a gain framed gamble, which is in line with the predictions on how schadenfreude affects decisions. However, what about the decisions made in loss framed gambles? The discussion above indicates that the majority chooses the risky option because of the higher perceived value and because of decision-makers' aversion to losses. In addition Kramer et al. (2011) suggests, "that for gambles involving losses, the risky option is the conventional one" (p. 141). Therefore, people who feel schadenfreude might also lean toward a risky option, as one might be seen as less deserving of a misfortune by choosing an option with a possibility of not losing anything rather than choosing an option with a sure loss. In addition, due to the loss aversion seen in decision-makers, the risky option in the loss frame is perhaps seen as the less risky option as there is a possibility of not losing anything. It is therefore predicted that schadenfreude will affect decision-makers to choose risky options in the loss frame, and safe options in the gain frame.

Aims of the Present Research

The literature on schadenfreude has focused mainly on the antecedent triggers of this emotion, and little research has been done on how schadenfreude can affect behaviour. Decision-making researchers have also failed to investigate how schadenfreude affects decisions, where some are now urging for this to be done (Ketelaar, 2006). As seen in the introductory example with Apple and Samsung, schadenfreude is a commonly occurring emotion in situations of competition. Therefore, it is important to understand the behavioural consequences of this emotion. Based on this, the aim of the present thesis is to investigate how schadenfreude affects decisions in the ultimatum game, risky gambles, and consumer contexts. This is an extension of Kramer et al.'s (2011) study where they looked at how schadenfreude affects consumer choices, and choice of risky gambles. The choice options were categorised as either conventional or unconventional, and Kramer et al. (2011) found that schadenfreude increases the likelihood of people choosing conventional options.

Extrapolating on this, four studies were conducted with the hypothesis that schadenfreude will make people choose more conventional options. In order to make sure that the schadenfreude induction is effective, a pre-test was conducted to select a video clip that induces the most schadenfreude. The first two studies investigated the effect of schadenfreude on decisions in the ultimatum game, where it was expected that schadenfreude would make proposers allocate more fairly compared to proposers in the control condition. As the results from these studies showed no significant differences, Study 3 used the same

induction method as in Kramer et al. (2011) to investigate whether schadenfreude affects choices of risky gambles in the gain and loss frame. Following the predictions from Kramer et al. (2011), it was expected that participants in the schadenfreude condition would choose the sure option in the gain frame, and the risky option in the loss frame more often than participants than in the control condition. Lastly, Study 4 was conducted where a direct replication of Kramer et al.'s (2011, Study 1) study was conducted, as Study 3 did not find a significant difference in choices between the schadenfreude and control condition. It was expected that participants in the schadenfreude condition would choose the compromise option more often than participants in the control condition.

Pre-test

The pre-test was conducted in order to make sure that the video clip used in the next studies elicits schadenfreude. Video clips were used because this method can present dynamic situations that combine auditory and visual stimuli (Schaefer, Nils, Sanchez, Philippot, 2010). This then enables the elicitation of discrete emotions, and not only moods (Gross & Levenson, 1995). Most importantly, video clips are most effective in inducing affective states compared to other techniques (Westermann, Spies, Stahl, & Hesse 1996). The scale used to measure schadenfreude in the pre-test is also used in subsequent studies, which is Van Dijk et al.'s (2005) schadenfreude and sympathy scale. This scale was selected because of its advantage of measuring the subtleties of schadenfreude, and using whole sentences and not only emotion terms in doing so.

Many studies have proposed the use of standardised video clips that can be used in emotion research (Gross & Levenson, 1995; Philippot, 1993; Schaefer et al., 2010). However, these have focused on the elicitation of the primary emotions, which means that there is no standardised video clip to elicit schadenfreude. This pre-test has therefore tested a selection of video clips on the level of elicited schadenfreude, whereas one video clip was selected for the use in the two subsequent studies.

Method

Participants and procedure. Participants were recruited through social media sites and e-mail to participate in an on-line study. 134 participants had submitted a questionnaire. However, 44 of these did not answer any of the dependent variables and were excluded from the analyses. Therefore, 90 participants were included in the analyses (52% women). The mean age was 26.39 ($SD = 6.46$). The pre-test was given in Norwegian ($N=47$) and English

($N=44$). One video (Video 4) had different sympathy scores between the Norwegian ($M = 1.61$) and English ($M = 2.43$) questionnaires, $t(60.92) = 3.88$, $p < .001$, $d = 1.878$. Due to only one video having differences based on language, the results from the two questionnaires were combined. Respondents were situated in various countries. All participants had completed high school or equivalent, and more than half had a Bachelor's degree or higher.

All participants saw eight video clips presented in random order and were asked questions regarding these after each video clip.

Materials. Video clips. The video clips were taken from YouTube, an online video-sharing site. A total of 36 videos were first selected. These videos ranged from clips of people hurting themselves because of their own bad decisions, to celebrities making fools of themselves, to very poor performances in singing competitions. Out of the 36 video clips, 12 video clips were picked as favourites. The video clips were discussed in regard to the length of the video clip, and whether it elicits schadenfreude. Finally, eight video clips were selected for the pre-test. A short description of each video clip is given.

Both Video 1 and Video 2 shows failed auditions to the UK version of X-Factor, which is a televised singing competition. Both video clips were of people who could not sing and were therefore ridiculed by the judges, and a live audience. These video clips were selected for the pre-test because videos of failed auditions have been previously used in schadenfreude research (e.g., Van Dijk et al., 2012). Video 3 is of a cyclist competing in Le Tour de France. As the cyclist is approaching the finish line, he lifts his hands from the handlebar in celebration. However, he stumbles and falls off his bicycle allowing the cyclist behind him win the stage. Video 4 is of a man fishing with his dog. The man tries to push the dog into the water with his foot, but in the process he falls in the water himself and not the dog. Video 5 is of a boy who pours some kind of flammable liquid on his trousers (around the crotch area), and lights his trousers on fire. The boy starts to panic when the fire doesn't extinguish easily, however the boy manages to put out the flames in the end. Video 6 is of a man who pushes a wheelbarrow up an incline and the wheelbarrow with its contents pours over the man. Video 7 is of a boy making his pet frog play a game on his phone. The game is to crush ants that are walking on the screen, and the frog probably thinks it's food. When the game ends, the boy uses his thumb to exit the game, and the frog bites his thumb. Lastly, Video 8 is from a Miss Teen USA pageant where Miss Teen South Carolina horribly fails at answering the question of why American pupils are bad at geography (the links to these videos can be found in Appendix A).

The combined length of these videos is 9 minutes 10 seconds, whereas the shortest video is 19 seconds (Video 3) and the longest is 3 minutes 10 seconds (Video 2). Previous research has also used video clips that vary in length, from 30 seconds to 8 minutes (Rottenberg, Ray, & Gross, 2007).

Schadenfreude scale. Van Dijk's measure of schadenfreude and sympathy was used (c.f. Van Dijk et al., 2005). The scale assesses schadenfreude through five statements ("I enjoy what happened to...", "I'm satisfied with what happened to...", "I couldn't resist a little smile", "I actually had to laugh a bit", and "I feel schadenfreude"), and sympathy through three statements ("I commiserate with... about what happened", "I feel sorry for what happened to...", and "I sympathize with..."). Participants were asked to what extent they agree with these statements on a 7-point Likert scale, where 1 = *strongly disagree* and 7 = *strongly agree*. This scale was translated into Norwegian by having two people translate the English version to Norwegian. Differences in translations were resolved through discussion (see Appendix B for the Norwegian translation of the scale).

Questions about the video clips. Participants were asked if they had seen the video clip before. In addition, they were asked if they would see the video clip at home, and if they would share the video clip with friends by using a 7-point Likert scale (1 = *definitely no*, 7 = *definitely yes*).

Results

Analyses focus on respondent's answers on the schadenfreude and sympathy scales. The responses from the 5 schadenfreude statements ($\alpha = .899$) and 3 sympathy statements ($\alpha = .909$) were averaged for every video.

Mean ratings. The output from the paired samples *t*-test comparing the schadenfreude and sympathy scores are seen in Table 1. Some of the videos produced unexpected results; such as participants felt more sympathy than schadenfreude towards the cyclist in Video 3, ($M_{\text{sym}} = 5.05$, $M_{\text{scha}} = 2.57$) $t(84) = -8.549$, $p < .001$, $d = -1.637$, and the man with the wheelbarrow in Video 6, ($M_{\text{sym}} = 4.48$, $M_{\text{scha}} = 2.96$) $t(81) = -4.869$, $p < .001$, $d = -.913$. In addition, four videos had no difference between schadenfreude and sympathy scores (all $p > .05$). However, Video 4 and Video 7 produced the expected results. Participants felt more schadenfreude ($M = 5$) than sympathy ($M = 1.99$) towards the man in Video 4, $t(82) = 13.695$, $p < .001$, $d = 2.362$. Participants also felt more schadenfreude ($M = 4.14$) than sympathy ($M = 2.6$) towards the boy in Video 7, $t(82) = 5.203$, $p < .001$, $d = .946$. The mean schadenfreude and sympathy scores for every video (except Video 8) had a

significant negative correlation, which supports previous findings (Van Dijk, Goslinga, & Ouwerkerk, 2008).

Table 1
Summary of paired samples t-test results from the pre-test

	Schadenfreude	Sympathy	<i>t</i> -value	Cohen's <i>d</i>	Correlation
Video 1	3.25	3.34	-.341	-.062	-.322**
Video 2	3.24	3.32	-.276	-.051	-.346**
Video 3	2.57	5.05	-8.549**	-1.637	-.559**
Video 4	5.00	1.99	13.695**	2.362	-.234*
Video 5	2.78	2.90	-.402	-.074	-.356**
Video 6	2.96	4.48	-4.869**	-.913	-.442**
Video 7	4.14	2.60	5.203**	.946	-.372**
Video 8	3.55	3.15	1.487	.247	-.177

Note. * indicates a significance level of $p < .05$, ** indicates a significance level of $p < .01$.

Discussion

The main objective of this pre-test was to select a video that would be used in subsequent studies. The results from this pre-test show that one video clearly elicits the most schadenfreude and the least sympathy, which is Video 4 where a man tries to push a dog into the water, but falls in himself. In addition, the schadenfreude score for Video 4 is high compared to schadenfreude scores obtained in other studies (e.g., $M = 3.16$ in Van Dijk et al., 2008, $M = 2.70$ in Van Dijk et al., 2005, $M = 4.75$ in Van Dijk et al., 2012). Video 4 will be therefore used to induce schadenfreude in the next studies. However, there was a significant difference in sympathy scores between Norwegian and English responses in Video 4, where respondents of the English questionnaire felt more sympathy than respondents of the Norwegian questionnaire. Compared to sympathy scores for the other videos, the sympathy English respondents felt for the man in Video 4 was still lower than the sympathy felt in the other videos. Therefore, Video 4 was the best choice.

The fact that Video 4 elicited the most schadenfreude is supported by previous research. The man in Video 4 is seen as deserving of the misfortune because his own actions lead to the misfortune (Feather, 2006). The man's actions were negative because he tried to push the dog into the water, and this previous negative action lead to a negative outcome, i.e., him falling into the water. In addition, because the man was responsible for his own outcome

(he didn't fall into the water because of anyone else than himself), the perceived deservingness increases (Van Dijk et al., 2005). In line with Video 7, which came second in eliciting the most schadenfreude, Video 4 depicts a light form of animal cruelty. This behaviour is often associated with "dark" personality traits (narcissism, Machiavellianism, and psychopathy, Kavanagh, Signal, & Taylor, 2013), and might have negatively affected the perceived likeableness of the man in Video 4 and the boy in Video 7. It is argued that the protagonists in these videos were seen not likeable, making their misfortunes seen as even more deserved, which lead to increased feelings of schadenfreude (Hareli & Weiner, 2002).

Study 1

Study 1 used the video selected in the pre-test to induce schadenfreude. The aim of this study was to investigate whether decisions made by the proposer in the ultimatum game are affected by schadenfreude. The hypothesis is that participants in the schadenfreude condition will give fairer allocations (i.e., 50% of the total) than participants in the control condition. Because of the fleeting nature of emotions (Schwarz & Clore, 2007), a one-shot paradigm of the ultimatum game was used. Given that the present study was only interested in the decisions of proposers, coupled with the lack of funds, all allocations were rejected. In order to make the experimental situation believable, a confederate was present in the lab. However, participants were lead to believe that they were going to be paid according to the outcome of the ultimatum game (see ethics section for discussion). The reason why a confederate was used instead of telling participants that they were playing against another person situated elsewhere, was to make sure that participants believed they played against another person. This is important as studies where measures to ensure anonymity have lead participants to doubt whether they were actually playing against a real person, which then affected participants' allocation in dictator games (Frohlich, Oppenheimer, & Moore, 2001). The decision of making participants believe that they were paid according to the outcome of the ultimatum game was made because financial incentives have shown to improve people's performance in economic games (Hertwig & Ortmann, 2001).

Method

Participants. There were 49 participants recruited at the University of Oslo's Department of Psychology, and all were given a candy bar as compensation. Participants ($N=7$) that had guessed the purpose of the study were excluded from the analyses. This is because the emotion's informational value was discounted, as participants knew that the

emotion is incidental and not integral (Schwarz, 2010). Therefore, 42 participants (73.8% women) with mean age 24.02 ($SD = 5.32$) were included in the analyses. All participants had completed high school, and a quarter had completed a Bachelor's degree or higher. Participants were randomly assigned to a 2(affect prime: Schadenfreude vs Neutral) between subjects condition.

Materials and procedure. The experiment was conducted in the social psychology lab in the Psychology Department at the University of Oslo. Participants were told that they were participating in two separate experiments, whereas one experiment was disguised as an experiment on videos and emotions, and the other experiment was disguised as an experiment on decision-making. A confederate was present during the experiment. In order to convince participants into believing that the confederate was a participant, all participants were met in a common-area of the Psychology Department and walked up to the lab. During the short walk to the lab, the experimenter told the participants that the other participant was already waiting in the lab. When the participant entered the lab, the confederate's back was seen. The confederate and the participant sat in the cubicles spaced furthest apart, and the experimenter sat in the middle cubicle.

The experiment was conducted using Qualtrics. Participants were randomly selected into experimental and control conditions. In the experimental condition, participants saw the video that elicited the most schadenfreude in the pre-test (a man and his dog). In the control condition, participants saw a neutral video of two men talking (links to the videos are found in Appendix C). After watching the video, participants responded to the same schadenfreude scale as used in the pre-test (see Appendix B), and to the same general questions about the video clip (see materials section in the pre-test).

Afterwards, participants were asked to participate in the second experiment. A welcome message was presented, and the participants were asked to press a button in order for them to connect to the second player. After a loading time of 15 seconds, participants were asked to play a one-shot ultimatum game (see Appendix D for the instructions given). Every participant was allocated the role of Player number 1 (i.e., proposer), and was therefore led to believe that the confederate was Player number 2 (i.e., responder). Participants were asked to write down the amount (out of 100 NOK) they wanted to allocate to Player number 2. As the purpose of the experiment was to look at allocations in the ultimatum game, all allocations were rejected. Demographic information was collected and participants were thoroughly debriefed.

Results

The scores from the 5 schadenfreude statements ($\alpha = .791$) and 3 sympathy statements ($\alpha = .774$) were averaged for the schadenfreude video and the neutral video.

Manipulation check. In order to determine whether the manipulation was successful, an independent samples *t*-test was conducted comparing the schadenfreude and sympathy scores between the schadenfreude and control conditions. There was a significant difference in schadenfreude elicited between the schadenfreude video ($M = 4.81$) and the neutral video ($M = 2.95$), $t(40) = -5.402$, $p < .001$, $d = -1.669$. However, the difference in sympathy scores between the schadenfreude ($M = 2.83$) and the neutral video ($M = 3.35$) was not significant, $t(40) = 1.385$, $p = .174$, $d = .428$. The schadenfreude and sympathy scores in the schadenfreude condition was negatively correlated $r = -.426$, however this did not reach significance ($p = .061$). In the control condition, the correlation between the schadenfreude and sympathy scores was not significant ($r = .334$, $p = .128$).

Allocation of money. An independent samples *t*-test was conducted in order to test the hypothesis that the allocation of money is expected to be fairer in the schadenfreude condition compared to the neutral condition. The analysis showed there was no significant difference in the allocation of money in the ultimatum game between the schadenfreude condition ($M = 48$ NOK) and the neutral condition ($M = 45.32$ NOK), $t(40) = .691$, $p = .493$, $d = .213$, but the difference was in the expected direction. However, there was not much variability in the allocations. As seen in Table 2, the modal amount allocated was 50 NOK where 73.8% of participants allocated half of the money to Player 2. However, 63.6% of males allocated 50 NOK to Player 2, whereas 80.6% of females allocated the same amount or more to Player 2. An independent samples *t*-test was conducted to see whether there was a difference in the allocation of money between males ($M = 42.45$ NOK) and females ($M = 48.06$ NOK) across conditions. However this the difference was not significant, $t(40) = -1.292$, $p = .204$, $d = -.45$

Table 2
Frequency table of allocations (out of 100 NOK) made in the Ultimatum Game (Study 1)

Allocation to Player 2	Frequency males (percentage males)	Frequency females (percentage females)	Total percent
20	1 (9.1%)	2 (6.5%)	7.1%
30	2 (18.2%)	3 (3.2%)	7.1%
37	1 (9.1%)	0 (0.0%)	2.4%
40	0 (0.0%)	3 (9.7%)	7.1%
50	7 (63.6%)	24 (77.4%)	73.8%
100	0 (0.0%)	1 (3.2%)	2.4%
Total	11 (100%)	31 (100%)	100%

Discussion

The result from Study 1 shows that the experimental manipulation used was successful, in that the video selected made participants feel more *schadenfreude* than the neutral video. However, the results showed that allocations to Player 2 in the ultimatum game did not significantly differ between *schadenfreude* and neutral conditions, but the small difference was in the expected direction. The hypothesis was therefore not supported, and the results from Study 1 cannot provide evidence for *schadenfreude* having an effect on the allocation of money in the ultimatum game.

The results from Study 1 show a similar pattern of results as other studies where proposers' median allocation is 50% of the total sum (Camerer, 2003; Güth et al., 1982). However, the percentage (73.8%) of fair offers was higher than seen in previous studies. For example, in Güth et al. (1982) only 43% of participants gave fair offers, and in Larrick and Blount (1997) 57% of participants gave fair offers. This might be due to the homogenous sample used in our study where almost three-quarters of the participants were women and that almost all participants were psychology students. Participants' subject area has shown to produce differences in the outcome of ultimatum games, where for example economics students allocate less money to responders compared to psychology students (Carter & Irons, 1991; Kahneman et al., 1986).

The use of a confederate where participants were able to identify the person they are allocating the money to might also have affected the results. In fact, studies have shown that female responders are usually allocated less money compared to male responders (Eckel & Grossman, 2001; Solnick, 2001). However, as the allocations in this study were very fair, we doubt that there would be a difference in allocations (i.e., larger percent of fair allocations) if the confederate were a man. Regardless of gender, the confederate might have evoked

participants to allocate fairly because they had an “identifiable victim” (Bohnet & Frey, 1998, p. 339). However, social distance of players has only shown to affect allocations in dictator games (e.g., Bohnet & Frey, 1998; Charness & Gneezy, 2008), where Player 2 can only punish Player 1 through social sanctions. Considering the large proportion of fair allocations seen in Study 1, the next study will use a more diverse sample from Amazon Mechanical Turk, and an identifiable confederate will not be used in order to see whether this also affected the results in Study 1.

Study 2

The aim of Study 2 was to replicate Study 1 while using a more diverse sample of participants, in an attempt to test the hypothesis. Participants in Study 2 were playing for real money, as all of the allocations were accepted and paid in full. However, the amount they were playing for was 1 USD, a much lower amount than used in Study 1. Even though the amount is low, it is shown that 1 USD ultimatum games conducted in Amazon Mechanical Turk are comparable to results found in laboratories (Amir, Rand, & Gal, 2012). Therefore, the hypothesis is that participants in the schadenfreude condition are expected to allocate fairer (i.e., 50% of the total) than participants in the control condition.

Method

Participants. There were 99 participants that had completed the study. Participants were recruited through Amazon Mechanical Turk and were paid a flat rate of 40 cents/0.40 USD in addition to the outcome of the 1 USD ultimatum game. However, 14 participants guessed the purpose of the study (Schwarz, 2010), and 4 participants failed to answer the instructional manipulation check correctly (Oppenheimer, Meyvis, & Davidenko, 2009). Therefore, 81 participants were included in the analyses (39.5% women). The mean age of the participants was 33.85 ($SD = 11.03$). All participants were American with the exception of two who were British and Irish. The largest proportion of participants had completed college or was in college, while 18.5% had only completed high school. Participants were randomly assigned to a 2(affect prime: Schadenfreude vs Neutral) between subjects design.

Materials and procedure. The experiment was conducted using Qualtrics and the survey was posted on Amazon Mechanical Turk (MTurk). The same materials were used as in Study 1, but in English (see Appendix D for the instructions given in the ultimatum game and Appendix C for links to the schadenfreude and neutral video). Contrary to the procedure in Study 1, all allocations were accepted, and a confederate was not used. However,

participants were still lead to believe that they were playing against a real participant. The same information was given as in Study 1, such as asking participants to wait for 15 seconds in order to connect with another participant. As real ultimatum game experiments are conducted on MTurk (e.g., Wells & Rand, 2012) we believed that most participants would find it plausible.

Results

The scores for the 5 schadenfreude statements ($\alpha = .883$) and 3 sympathy statements ($\alpha = .795$) were averaged for the schadenfreude and neutral videos.

Manipulation check. An independent samples *t*-test, which compared the average scores of schadenfreude between the schadenfreude video and the neutral video, was conducted. There was a significant difference between the schadenfreude scores for the schadenfreude video ($M = 4.77$) and the neutral video ($M = 3.53$), $t(79) = -3.860$, $p < .001$, $d = -.859$. However, there was no significant difference in sympathy scores between the schadenfreude ($M = 3.68$) and neutral ($M = 3.5$) video, $t(79) = -.543$, $p = .589$, $d = -.121$. There was a significant negative correlation between schadenfreude and sympathy scores in the schadenfreude condition $r = -.363$, $p = .025$, indicating that the more schadenfreude participants experienced, the less sympathy they felt. In the neutral condition, there was a significant positive correlation between schadenfreude and sympathy scores $r = .323$, $p = .035$, which then indicates that when sympathy scores increase, schadenfreude scores decrease.

Allocation of money. The amount of money allocated to Player 2 was compared between the schadenfreude and neutral conditions by using an independent samples *t*-test. There was a non-significant difference between the amount of money allocated in the schadenfreude condition ($M = 42.26$ cents) and the neutral condition ($M = 43.88$ cents), $t(79) = .459$, $p = .648$, $d = .102$. In addition, the difference was not in the predicted direction. The modal allocation was 50 cents where 61.7% of participants across conditions allocated this amount. Of the male participants, 57.1% allocated 50 cents, and of the female participants, 68.8% allocated 50 cents. However, the difference in allocations between males ($M = 43.69$ cents) and females ($M = 42.25$ cents) was not significant, $t(79) = .400$, $p = .690$, $d = .091$.

Comparison of the results from Study 1 and Study 2. In order investigate whether the allocation of money in the ultimatum game was different between Study 1 and Study 2, an independent samples *t*-test was conducted. Allocations from both experiments were out of 100 (NOK in Study 1 and cents in Study 2), which made the allocations comparable. The

results from the t-test indicate that there is no significant difference in the allocations between Study 1 ($M = 43.12$ NOK) and Study 2 ($M = 46.6$ cents), $t(121) = -1.238$, $p = .218$, $d = -.235$.

Discussion

The results from Study 2 are similar to those of Study 1 where the manipulation was successful, but there was no significant difference in allocation of money between the schadenfreude and neutral conditions. However, the non-significant difference in Study 2 was not in the predicted direction, which is contrary to the results in Study 1. In addition, the allocations made in the ultimatum game were not significantly different between Study 1 and Study 2 even though different amounts of money were used. These results corroborate with Amir et al.'s (2012) finding where 1 USD ultimatum games on MTurk produce similar results to ultimatum games in laboratories with higher amounts of money. These results also show that the small social distance between the proposer and responder, and the gender of the confederate in Study 1, did not affect participants to allocate more fairly.

Kramer et al. (2011) found that schadenfreude led to the anticipation of unfavourable outcomes, which then led participants to choose conventional options. The ultimatum game seemed ideal to test these predictions further, as proposers are faced with the consequences of their decisions right away. However, as Study 1 and 2 did not find an effect of schadenfreude on decisions, Kramer et al.'s (2011) predictions might not be applicable to the ultimatum game. A possible reason is that the informational value of schadenfreude might have been overridden by other, more salient sources of information, such as the anticipation of how Player 2 will respond to offers (Wells & Rand, 2012). The ultimatum game is inherently social, whereas risky gambles are not, and the outcome of gambles are due to chance and not other people. Therefore, a conceptual replication of Kramer et al.'s (2011, Study 3) study was conducted where a similar decision task was used, in order to further investigate whether schadenfreude does affect decisions.

Study 3

As the two previous studies did not find an effect of schadenfreude on decisions in the ultimatum game, a decision task similar to Kramer et al.'s (2011, Study 3) decision task was used. The first aim of Study 3 was to extend Kramer et al.'s (2011, Study 3) findings to investigate risky choices in both the loss and gain frame. Kramer et al. (2011) found that, when presented with safe or risky gambles, participants in the schadenfreude condition chose

the safe option more often than participants in the calm condition. The gamble was framed in terms of gains, and the effect of schadenfreude on choice of the safe option was mediated through anticipation of unfavourable outcomes. However, when gambles are framed in terms of losses, the risky option is most often chosen (Tversky & Kahneman, 1981). Kramer et al. (2011) argue that the risky option in a loss frame is a conventional option. Therefore, the hypothesis in Study 3 is that choice of conventional options (i.e., safe options when these are presented as gains, and risky options when these are presented as losses) will be chosen more often in the schadenfreude condition compared to the control condition, and this effect is mediated through anticipation of unfavourable outcomes.

As the previous studies did not find a difference in decisions when using a video clip to elicit emotions, we decided to use the same affective priming task as used in Kramer et al. (2011). Studies that investigate how feelings affect decisions have used affective priming tasks successfully (Kramer et al., 2011; Pham, 1998). In addition, researchers have started recently using affective priming tasks more often because this procedure elicits emotions from personal events (Salas, Radovic, & Turnbull, 2012).

Method

Participants. There were 132 undergraduate students who took part in the experiment through the University of Oslo's Research Pool in exchange for course credit. However, 61 participants were excluded due to either incomplete answers (i.e., not answering the dependent variables) ($N = 31$); correctly guessed the purpose of the experiment ($N = 15$); or did not wish to have their results analysed ($N = 15$). Therefore, 71 participants were included in the analyses (70% women). The mean age was 22.69 ($SD = 6.22$), and all participants had completed high school whereas a quarter of these also had a Bachelor's or Master's degree. Participants were randomly assigned to a 2(affect prime: Schadenfreude vs Calm) x 2(question frame: Gain vs Loss) between-subjects design.

Materials and procedure. Participants were asked to part-take in two ostensibly unrelated studies, titled "experiences and emotions" and "decisions under uncertainty".

The first study was explained to participants as a study that looks at how different experiences make people feel different emotions. The real purpose of this part of the study was to induce participants to either feel schadenfreude or calm through an affective priming task. The calm condition was used as a control. In the schadenfreude condition, participants were asked to spend up to 5 minutes thinking about an event that affected them personally and made them feel happy when someone else who deserved it did badly at a particular task.

In the calm (control) condition, participants were instead asked to think about an event that affected them personally and made them feel calm because someone else completed a task. Afterwards, participants were asked to write about the event in as much detail and as vividly as possible. In order to determine if the manipulation was successful, participants were asked to respond to the Norwegian translation of Van Dijk's measure of *schadenfreude* and sympathy by using a 7-point Likert scale (see Appendix B).

Participants were then asked to part-take in the second study, which was an economic version of the Asian Disease problem. In this study, participants were asked to choose between two options, whereas one involved some risk, and the other did not (the problems were taken from Teigen & Nikolaisen, 2009). They were asked to imagine that they have invested 600 000 NOK in a company that is now on the brink of bankruptcy. Participants in the gain frame condition were presented with two alternatives that were communicated in terms of gains: Sure gain of 200 000 NOK, or 1/3 probability of saving the whole sum and 2/3 probability to save nothing. Participants in the loss frame had the same options in terms of pay-offs, but framed in terms of losses: Sure loss of 400 000 NOK or 1/3 probability of nothing will be lost and 2/3 probability that the whole sum will be lost (see Appendix E for the instructions given). In order to investigate whether the choice of conventional options are mediated through anticipation of unfavourable outcomes, participants answered three questions relating to this (adapted from Scheier & Carver, 1985). These questions were: "If something goes wrong for me, it will", "things never work out the way I want them to", and "I rarely count on good things happening to me" (see Appendix F for the Norwegian translations of the scale). A 5-point Likert scale (where 0 = *strongly disagree*, 4 = *strongly agree*) was used. Practical questions regarding whether participants were distracted during the experiment and whether they answered the questions seriously were asked. Lastly, participants were thanked and debriefed.

Results

The scores from the 5 *schadenfreude* statements ($\alpha = .679$) and 3 sympathy statements ($\alpha = .708$) were averaged for the *schadenfreude* condition and for the calm condition. The scores from the anticipation of unfavourable outcomes scale were also averaged ($\alpha = .742$). The dependent variable (choice of safe or risky options) was recoded representing choice of conventional or unconventional options. Therefore, the choice of the risky option in the loss frame was given the same code as the choice of a safe option in the gain frame, representing choice of a conventional option.

Manipulation check. An independent samples *t*-test comparing the schadenfreude and sympathy scores between the calm and schadenfreude conditions was conducted. There was a significant difference in schadenfreude scores between the calm ($M = 3.99$) and the schadenfreude ($M = 4.75$), $t(69) = 2.586$, $p = .012$, r , $d = .615$. In addition, there was a significant difference in sympathy scores between the schadenfreude ($M = 2.55$) and the calm ($M = 3.77$) condition, $t(68) = -3.732$, $p < .001$, $d = -.894$.

Choice of conventional versus unconventional option. A three-way hierarchical loglinear analysis with the categorical dependent variable choice (conventional or unconventional), and the categorical independent variables emotion (schadenfreude or calm), and frame (gain or loss) was conducted. The three-way interaction of Choice x Emotion x Frame was not significant, $\chi^2(1) = .1039$, $p = .308$. To break down the three-way interaction and find which two-way interaction was not significant, separate Chi-squared tests were conducted. A 2 x 2 Chi-squared test did not show a significant association between emotion felt and choice of risky or safe options, $\chi^2(1) = .338$, $p = .621$, $\Phi = .069$, not supporting the hypothesis that schadenfreude affects choice of conventional options. However, the Choice x Frame interaction in the hierarchical loglinear analysis was significant, $\chi^2(1) = 10.759$, $p = .001$. Accordingly, a 2 x 2 Chi-squared test shows that there is a significant association between how the options were framed and which option was chosen, $\chi^2(1) = 10.68$, $p = .001$, $\Phi = .388$, replicating previous framing studies. Most participants (83.8%) chose the conventional (i.e., safe option) in the gain frame, but in the loss frame 47.1% of participants chose the conventional (i.e., risky) option.

Mediation analysis. Following Kramer et al. (2011), a mediation analysis was conducted to investigate whether the anticipation of unfavourable outcomes mediates the effect of schadenfreude (independent variable) on the choice of conventional or unconventional options (dependent variable). Baron & Kenny's (1986) causal steps mediation analysis shows that mediation is demonstrated through three steps: First, that there is a significant effect of the independent variable on the dependent variable. Second, there is a significant effect of the independent variable on the mediator variable (anticipation of unfavourable outcomes). Third, the effect of the independent variable on the dependent variable is no longer significant in a regression analysis with the independent and mediator variables. A bimodal logistic regression shows that the emotion felt did not affect choice of conventional and unconventional options, $\beta = -.294$ ($SE = .507$), Wald's $\chi^2(1) = .337$, $p = .562$, not satisfying the first criterion of mediation between schadenfreude and anticipation of unfavourable outcomes. Testing the second criterion, a regression analysis was conducted

with emotion as the independent variable and the anticipation of unfavourable outcomes scale as the dependent variable. This analysis did not show a significant effect of emotion on anticipation of unfavourable outcomes, $\beta = -.152$, $t(69) = -1.279$, $p = .205$. This means that the anticipation of unfavourable outcomes does not mediate the effect of schadenfreude on the choice of conventional and unconventional options, as the two first criteria were not satisfied, making it unnecessary to test the third criterion.

Discussion

The results from Study 3 show that there is an association between the framing of the options and the choice of conventional or unconventional options. Compared to previous framing studies, more participants than expected chose the unconventional (i.e., risky) option in the loss frame: 47% chose the risky option in Study 3 whereas 87% chose the risky option in Tversky and Kahneman's (1981, Problem 3) study. However, the emotions felt did not affect the choice of conventional or unconventional options, despite the manipulation check indicating that participants felt schadenfreude in the experimental condition. In addition, mediation analyses showed that anticipation of unfavourable outcomes does not mediate the effect of choice through emotions felt.

A possible explanation for the non-significant effect of emotions on choice is that the choice task might have made participants feel negative affect, which then overrode the emotions felt after the affective priming task. In both the gain and loss frames, participants were presented with a scenario where they were about to lose a large sum of money. A study showed that when participants were presented with a scenario where they either had to cut their wage or were not given a bonus, they felt more negative towards the wage cut (Lieberman, Idson, & Higgins, 2005). Therefore, as the choice task in the present study presented a scenario of loss, and not prevention of gain, participants' emotions might have been affected by the task.

Study 3 was conducted in order to investigate whether schadenfreude affects decisions by using decision tasks closer to Kramer et al.'s (2011) study. The results from this study did not support these hypotheses. However, as the design of Study 3 was not exactly the same as in Kramer et al.'s (2011, Study 3) study, the null-finding might have been because of flaws in the design. Such as the three previous studies has used the same schadenfreude scale, whereas Kramer et al. (2011) has used a scale that measures overall positive and negative affect. In order to overcome this problem, a direct replication of

Kramer et al.'s (2011, Study 1) study was conducted where the exact same methods were used.

Study 4

The aim of Study 4 was to replicate Kramer et al.'s (2011, Study 1) findings where they found that participants feeling schadenfreude chose more compromise options than happy (i.e., control) participants. It was then expected that participants in the schadenfreude condition would choose the compromise option more often than participants in the control (happy) condition. In order to determine whether participants were feeling schadenfreude or happiness, their positive and negative affect was measured. According to Kramer et al. (2011), schadenfreude consists of a mixture of positive and negative affect, meaning that participants in the schadenfreude condition was expected to feel more negative affect than participants in the happy condition. Positive affect was expected to be the same in both schadenfreude and happy conditions.

Method

Participants. Participants were recruited through Amazon Mechanical Turk and 118 people completed the survey. Participants were paid 0.40 USD. However, 28 participants either guessed the purpose of the study or failed to answer the instructional manipulation check correctly (Oppenheimer et al., 2009), meaning that 90 participants were included in the analyses (48.9% women). The mean age of the participants was 34 years ($SD = 12.43$). Almost all participants were American. Most participants either had some college or were college graduates, and a small proportion had only completed high school (13.3%). Participants were randomly assigned to a 2(affect prime: Schadenfreude vs Happy) between-groups design.

Materials and procedure. The materials and procedure were identical to Kramer et al.'s (2011, Study 1) study. However, the study was not conducted in a laboratory, but was available on-line on Amazon Mechanical Turk. Participants were asked to part-take in two ostensibly unrelated studies.

The first study used the same affective priming task as the in Study 3, but instead of using calmness as the control condition, happiness was used. Participants were thus asked to spend 5 minutes thinking about an event that affected them personally and made them feel happy when someone else who deserved it did really well at a particular task. The same instructions were given in the schadenfreude condition as in Study 3. Afterwards, participants

were asked to write about the event in as much detail and as vividly as possible. In order to determine if the manipulation was successful, participants were asked to indicate which emotions they felt in regards to the event just described by using a 7-point Likert scale (1 = *not at all*, 7 = *extremely*). The emotions were indicative of positive affect (happy, cheerful, delighted, joyful, pleased, good) and indicative of negative affect (sad, regretful, low, guilty, uneasy, bad), and were presented in random order. After completing the ratings, participants were thanked for participating in the first study.

Participants were then asked to participate in the second study, titled “consumer preferences”. Participants were asked to choose between three pairs of binoculars where two are categorised as an extreme option, and one is a compromise option. In the extreme option, participants had to make trade-offs between weight and magnification, where one binocular pair was light but had low magnification, and the other was heavy but had high magnification. The compromise option, on the other hand, was average in both attributes (the task can be found in Appendix G).

Lastly, demographic questions and practical questions regarding the distraction level of participants were asked.

Results

The scores for the 6 positive emotions were averaged to form a positive affect index ($\alpha = .924$) and the 6 negative emotions were averaged to form a negative affect index ($\alpha = .902$).

Manipulation check. An independent samples *t*-test was conducted, which compared the average scores of the positive and negative affect indexes between the schadenfreude and happy conditions. Participants felt significantly more positive affect in the happy condition ($M = 5.67$) than in the schadenfreude condition ($M = 4.70$), $t(88) = -3.820$, $p < .001$, $d = -.807$. The converse was found for negative affect where participants felt more negative affect in the schadenfreude condition ($M = 2.42$) than participants in the happy condition ($M = 1.58$), $t(68.18) = 3.389$, $p = .001$, $d = .716$. The negative and positive affect indices were significantly correlated, $r = -.498$, $p < .001$, meaning that when there is a high score of positive affect, there is a low score of negative affect.

Choice of compromise option. To test whether the manipulation of schadenfreude or happiness affected the choice of compromise option over extreme options, a chi-squared test was conducted. A 2 x 3 chi-squared test was first conducted where the two extreme options were separated. However, this test did not meet the assumption that the expected cell count

must be over 5. The two extreme options were therefore combined, and a 2 x 2 chi-squared test was conducted. There was a significant association between the emotion felt and the choice of a compromise or extreme option, $\chi^2(1) = 4.593, p = .037, \Phi = .226$. Within the schadenfreude condition, 35.7% of the participants chose the conventional option, whereas in the happy condition, 58.3% of the participants chose the conventional option. This seems to represent the fact that based on the odds ratio, the odds for a participant to choose the conventional option is 2.8 times higher when s/he is happy.

Discussion

The results of Study 4 shows that participants in the schadenfreude condition experienced less positive affect and more negative affect than participants in the happiness condition. In addition, participants in the schadenfreude condition chose one of the extreme options more often than participants in the happiness condition. These results did not replicate the findings from Kramer et al. (2011), where the opposite was found. Namely that participants in the schadenfreude condition chose the compromise option more often than participants in the happiness condition.

This disparity between the present findings and Kramer et al.'s (2011) findings might be because participants in the present study did not feel schadenfreude. In order to feel schadenfreude one needs to appraise the misfortune of another as beneficial for oneself (Frijda, 1988), which implies that schadenfreude is experienced as a positive emotion. However, as participants in the schadenfreude condition experienced less positive affect and more negative affect than in the control condition, the affective priming task might have made participants not feel schadenfreude but rather sad or shameful. This is because the act of remembering such an immoral event as happiness of other's misfortune (Baudelaire, 1855/1955) can provide information about one's moral character. Research has shown that the ease of bringing something to mind provides information about how people perceive events and themselves (Tversky & Kahneman, 1973). A study asked participants to recall 12 or six events of when they behaved in an assertive manner (Schwarz et al., 1991). The study found that participants who were told to recall 12 events rated themselves less assertive than participants in the six events condition. This is because the strain of bringing 12 assertive events to mind provides information that they are not assertive. However, the ease of recalling six events provides information that they in fact are assertive. Therefore, participants in the present study might have inferred that they are an immoral person because they were able to bring a schadenfreude-inducing event to mind, which then lead to them

feeling sad or shameful. Interestingly, previous research has shown that sad participants favour risky decisions due to goals of reward replacement (Raghunathan & Pham, 1999). This corroborates with the results in the present study as participants in the schadenfreude condition chose more extreme (unconventional) options that participants in the control condition.

General Discussion

The aim of the present thesis was to investigate the effect of schadenfreude on decisions in four studies. The hypothesis was that feeling schadenfreude would increase the choice of conventional options in the ultimatum game (Study 1 and Study 2), in an economic version of the Asian disease problem (Study 3), and in consumer decisions involving compromise and extreme options. These predictions were supported by previous research, which found that schadenfreude made participants choose conventional consumer options, and conventional gambles (Kramer et al., 2011). This effect was found because schadenfreude provided information to participants about the possibility of a misfortune happening to them. The consequences of schadenfreude are important to study as schadenfreude often arises in contexts of competition (Leach & Spears, 2008). Thus, in competitive environments, such as organisations and universities, people are faced with many important decisions; making it essential to understand how schadenfreude affects decisions, as it is likely that schadenfreude of another person's misfortune is often experienced in these environments.

However, Study 1 and 2 failed to find an effect of schadenfreude on decisions made in the ultimatum game. Even though previous studies have shown that emotions can affect allocations made in the ultimatum game (e.g., Ketelaar & Au, 2003), and that the manipulation checks in Study 1 and 2 showed that participants felt more schadenfreude in the experimental condition compared to the control condition. A possible explanation for this null-finding is that the use of the ultimatum game as a decision task is quite different from the decision tasks used in Kramer et al.'s (2011) studies: Decisions made in the ultimatum game affect other people (i.e., the responder), whereas gambles and consumer decisions only affect oneself. Therefore, the effect that schadenfreude informs decision-makers of the possibility of experiencing a misfortune might have been overridden by other concerns, such as anticipation of how the other player will respond to offers (Wells & Rand, 2012).

Study 3 was then conducted using a decision task closer to that of Kramer et al. (2011, Study 3) where a gain framed gamble was used. Study 3 thus used an economic

version of the Asian disease problem, which included both gain and loss framed gambles in order to replicate Kramer et al.'s (2011) findings and to investigate the effect of schadenfreude on the choice of loss-framed gambles. An anticipation of unfavourable events scale was also included in order to investigate if the responses to this scale mediate the effect of schadenfreude on the choice of gambles. The results from Study 3 show that there was no difference in the choice of risky and safe options based on schadenfreude, which also provided non-significant mediation analyses. These results therefore failed to replicate Kramer et al.'s (2011) findings. Study 3 did however find an effect of framing where participants chose the safe option more often in the gain frame, compared to the loss frame, replicating Tversky and Kahneman's (1981) framing effect.

In sum, the three first studies, which tested the same hypothesis as Kramer et al. (2011) but with different methods, did not find an effect of schadenfreude on decisions. Because of these unsuccessful conceptual replications, a direct replication of Kramer et al. (2011, Study 1) was conducted in Study 4, meaning that the same manipulations and measures were used.

Participants were induced to either feel schadenfreude or happy and were asked to choose between compromise (conventional) or extreme (unconventional) options. The results from Study 4 showed that participants in the schadenfreude condition choose the unconventional option more often than participants in the control condition, which is the opposite of Kramer et al.'s (2011) findings. However, it is difficult to determine whether participants really felt schadenfreude, as the manipulation check showed that more negative affect and less positive affect was reported by participants in the schadenfreude condition. It might be that participants did not feel schadenfreude, but negative emotions, which subsequently affected participants to choose unconventionally. This corroborates with previous research where negative affect has shown to increase risky decisions (Raghunathan & Pham, 1999). Then again, the same affective priming task was used in Study 3, which showed to have made participants feel schadenfreude by using another scale. The informational value of schadenfreude might also not be as predicted, as shown in the non-significant mediation analysis in Study 3, making it possible that schadenfreude affected participants' unconventional decisions. Regardless of the interpretations, Study 4 showed that participant's emotions affected their decisions, and the effect was opposite of the predicted direction, which is interesting as Studies 1 through 3 did not find an effect. The opposite direction of the results is perhaps not surprising as the hypotheses in the present thesis have been subject to a ceiling effect: The hypotheses predict that schadenfreude will make people

choose an option which is already chosen by the majority when not induced to feel any particular emotions, making it difficult to detect any differences between the experimental and control groups. However, Kramer et al. (2011) found that schadenfreude increases the choice likelihood of conventional options regardless of the ceiling effect. These conflicting results of finding opposite effects and non-significant effects show the importance of replicating studies, which is discussed next.

Importance of Replication Studies

The practice of replicating research is often argued to be one of science's defining features (Popper, 1934/1992). This is in order to strengthen theories by showing that the results replicate in different participant samples, or even by using other methods. Conversely, unsuccessful conceptual replications show the limits of theories. Replication studies are also important for the falsifiability of theories; by replicating studies and finding that there is no effect, perhaps due to a false positive in the original study (Smith, Mackie, & Claypool, 2014).

However, over the past decades, a trend in psychological research has emerged where replicating studies has not been a priority for researchers. This is because researchers are met with strong incentives to bring forth new ideas, these incentives being publications, employment, and tenure (Nosek, Spies, & Motyl, 2012). Replication studies, on the other hand, are not sought after. In addition, replication studies with null findings are not published. This is because researchers, aware that null findings rarely get published, do not submit their results for publication (Ferguson & Heene, 2012). The trend of not publishing null results has been coined the "file-drawer problem" (Rosenthal, 1979) and has prevented the falsifiability of theories (Ferguson & Heene, 2012).

The recent focus on replications has been amplified by the discovery in 2011 that Diederik Stapel, a highly respected social psychologist, had fabricated and falsified data through most of his research career, resulting in 53 publications being retracted (Stroebe, Postmes, & Spears, 2012). In his letter of justification, Stapel wrote that scientific fraud is too easy, as there are too few control mechanisms in science (Stroebe et al., 2012). Therefore, Tilburg University concluded in their report that psychological science should focus more on the replication of results (Stapel Investigation, 2012). The importance of replication studies is not only in order to catch unethical researchers, but also to find false positive results and to increase the reliability and validity of studies.

The process of replicating studies and determining whether these are false positives or not are not straightforward tasks. There are many reasons for unsuccessful replications: First, the original effect may in fact be false. Second, the methodology of the replication differs from the original study in such a way that an effect is not found. Third, because of insufficient statistical power in the replication study (Open Science Collaboration, 2012). In addition, there are different views on what constitutes a successful replication. A narrow definition constitutes a successful replication when the same statistical significant effect as in the original study is obtained. According to a broad definition, a replication is successful when the effect is in the same direction as in the original study but is not necessarily significant (Open Science Collaboration, 2012).

Therefore, replication studies are important for the validity and reliability of studies, but it is not easy to determine whether an original study is a false positive through unsuccessful replication studies. For example, the present thesis' results show that the direct replication of Kramer et al.'s (2011, Study 1) findings was unsuccessful where an opposite effect was found. However, a post-hoc statistical power analysis indicates that the statistical power of 0.5747 in Study 4 did not reach the recommended level of 0.8 (Cohen, 1988), making it difficult to conclude that Kramer et al.'s results are false positives. In addition, the unsuccessful conceptual replications of Kramer et al.'s (2011) findings might have been due to some methodological problems, which are discussed below.

Limitations of the Present Studies

The first limitation is that the induction of *schadenfreude* might have not been successful to the extent that it affected behaviour. The video clips in Study 1 and 2 might have elicited emotion perception to the extent that participants appraised the emotional significance of the stimulus (Phillips, Drevets, Rauch, & Lane, 2003), which then produced significant differences in the manipulation checks. However, this manipulation might not have led to more elaborate processing such as the triggering of personally relevant memories and associations (Ellard, Farchione, & Barlow, 2012). This is shown where Ellard et al. (2012) found that films were not rated as personally relevant as music, meaning that films did not bring up past memories or that participants could personally relate to the emotions depicted in the film. Therefore, due to the dynamic nature of films, which is seen as an advantage (Schaefer et al., 2010), can also be a disadvantage: One is reacting to a situation that is presented in a film, which makes the personal relevance abstract. When watching films, the induction of emotional states is not generated from mental processing, but is only

presented to participants (Gerrard-Hesse, Spies, & Hesse, 1994). Music, on the other hand, can have direct associations to personal memories, and the music then generates an emotion because of these associations. For example, after the terror attacks in Oslo and Utøya on the 22nd of July 2011, the song “Mitt lille land” became a song many found comfort in during their sorrow. When listening to this song, four years after the attacks, these emotions are brought up again.

Affective priming tasks, on the other hand, have the advantage that they generate more personally relevant emotions (Philippot, Schaefer, & Herbette, 2003). As with music, emotions are internally generated, and not presented, in an affective priming task. However, the process of recalling emotional events leads to an overall intense elicitation of many emotions (Salas et al., 2012): When recalling an event, the target emotion, as well as other emotions, are elicited. As seen in Study 4, the process of eliciting *schadenfreude* through the affective priming task could have also elicited other emotions, such as sadness. This is problematic for studies that wish to investigate one emotion at a time.

The second limitation is the *schadenfreude* scale used in the manipulation checks in Study 1 through 3. These studies did not find differences in decisions between the *schadenfreude* and control conditions. One possible explanation for this is that the *schadenfreude* scale used in these studies might have led participants to discount the relevance of their feeling of *schadenfreude* when making decisions. For example, Keltner, Locke, and Audrain (1993) showed that perceived life satisfaction changed based on whether participants attributed their emotions to specific events or situational circumstances. After reading a story that made participants feel sad, they were either asked to write about their current emotions and the causes of these, or to write about their emotions in regards to being in the laboratory. Participants who were asked to label their emotions after the sad story knew that they were feeling sad because of the story, which then made them discount the informational value of their sadness when evaluating their life satisfaction. In the present studies, one of the items in the *schadenfreude* scale is “I feel *schadenfreude*” (Van Dijk et al., 2005), which then could have lead to participants disregarding the informational value of this emotion when making decisions. An important premise in feelings-as-information theory is that the source of incidental emotions is not disclosed when people are making decisions based on what they are feeling (Schwarz & Clore, 1983).

However, Keltner et al.’s (1993) study used an evaluative judgement task, while the present studies used a decision task. The nature of an evaluative judgement task is predominantly emotional, making the negative emotions a central source of information.

Decision tasks, on the other hand, are not predominantly emotional which means that there is no direct link between the emotion felt and the task at hand. Therefore, in Keltner et al.'s (1993) study participants were aware that their current sad emotions were due to the sad story and not necessarily due to poor life satisfaction. However, in the present study, the manipulation check did not ask about the direct link of how *schadenfreude* can affect decisions. In other words, the manipulation check did not ask participants whether they were afraid that a misfortune is going to happen to them because they saw someone experiencing a misfortune. However, as Study 1 through 3 did not find an effect on emotion in the decision tasks, but Study 4 did, which used another emotion scale, it is possible that labelling of emotion terms also affect subsequent decision tasks, and not only evaluative judgements.

The final limitation is whether the design of the studies made sure that participants' affect was used in the decision tasks. According to dual processing theories (e.g., Kahneman, 2011) people process information in two different ways: through a fast, affective system 1 or through a slow, analytical system 2. System 1 is often used when people are under high cognitive load, which then implies that mental short cuts or heuristics are used. The use of emotions in decision tasks is a kind of heuristic where one asks, "how do I feel about it?" (Schwarz & Clore, 1988). Therefore, under cognitive load the use of emotions in decision tasks would be more prevalent. The present studies did not manipulate cognitive load, perhaps making it possible for participants to use the more analytical system 2.

In sum, the present thesis' studies had some methodological problems. However, as this research area is relatively new (i.e., to our knowledge only one previous study has investigated the effect of *schadenfreude* on decisions), there is no consensus on which methods that should be used. For example, researchers seem to disagree on which method to elicit emotions is the most effective where Schaefer et al. (2010) argue the use of films is the most effective, whereas Salas et al. (2012) argue affective priming tasks are most effective. In addition, as *schadenfreude* research has mainly focused on the antecedent triggers of this emotion, there is no consensus on how to properly induce *schadenfreude* and then how to measure feelings of *schadenfreude* in manipulation checks. Keltner et al.'s (1993) research suggests the use of specific emotion terms in manipulation checks can cause participants to disregard the informational value of their emotions. Future research must therefore be conducted to address these problems, which is discussed next.

Suggestions for Future Research

Schadenfreude is a common emotion felt by most people at various times. It is easy to imagine that schadenfreude can affect people's behaviour, and it is therefore important to investigate the effect of schadenfreude on behaviour and decisions. Despite Study 1 through 3 not finding an effect, future studies should focus on developing methods to induce and measure schadenfreude in order to conclude with certainty whether schadenfreude affects decisions or not.

The induction of schadenfreude is difficult as schadenfreude is a complex emotion where many factors must be present in order for one to feel schadenfreude; such as whether the person experiencing the misfortune deserved it (Feather, 1999), if this person is resented because of his higher position (Feather, 2008), if he is disliked (Hareli & Weiner, 2002), and if he is envied (Smith et al., 1996). Video clips are disadvantaged when it comes to eliciting schadenfreude due to feelings of resentment, and envy, because these factors vary between people. Affective priming tasks, on the other hand, do not face the same problems. However, the process of remembering events that elicit schadenfreude might induce other emotions, such as guilt and sadness. It would be interesting for future research to further pre-test schadenfreude videos, and look at whether there are some demographic or personal differences in the schadenfreude felt between these videos. For example, students might feel more schadenfreude when another resented student suffers a misfortune compared to the rest of the population. Different schadenfreude videos can then be presented according to some demographic variables.

Second, future studies should investigate which schadenfreude scale is the most effective as a manipulation check. As discussed above, the use of the emotion term schadenfreude in manipulation checks can lead to the discounting of the informational value of the emotion in subsequent decision tasks (Keltner et al., 1993). It would be beneficial to directly test whether the use of the term schadenfreude in manipulation checks does discount the informational value of this emotion. Future research could use the same manipulation and the same decision task but then change the scale used in the manipulation check. For example, future research could compare Van Dijk et al.'s (2005) schadenfreude scale (which the present thesis used in Study 1 through 3) with Hareli and Weiner's (2002) scale, which operationalized schadenfreude by measuring joy, pleasure, and happiness.

Lastly, it would be interesting for future studies to manipulate cognitive load and see whether emotions are used as information. This can be done by introducing an additional memory task (e.g., Siemer & Reisenzein, 1998). As Study 1 through 3 did not find an effect

of emotions on the decision task, maybe emotions are only used as information when heuristic processing is the only option (Forgas, 2008).

Ethical Considerations

As the present studies used various degrees of deception a discussion of the ethical considerations is in order. First, it is important to mention that these studies were approved by the Department of Psychology's Research Ethics Committee at the University of Oslo (reference number: 875929).

In Study 1 through 4, participants were not informed about the real purpose of the study, making them unable to give informed consent. Participants were lead to believe that they were participating in two separate studies when these were actually one study. In addition, the ostensible purpose given to the participants was not true. However, according to APA's Ethical Principles of Psychologists and Code of Conduct (American Psychological Association, 2002) deception is justified if non-deceptive alternatives are not feasible. In order for participants to attribute informational value to their emotions when making a decision, they have to believe that the decision task is eliciting the emotion (Schwarz & Clore, 2007). Therefore, if participants are unaware of the source which their emotions arise from, they will think that the emotion is integral to the decision task. If participants were informed about the purpose, i.e., the study of how *schadenfreude* affects decisions, then they would have discounted the informational value of their emotions when making a decision. Therefore, the present studies use of deception is justifiable in terms of alternative nondeceptive methods are not available.

In Study 1, additional deception was used. In order to ensure that participants believed they were playing the ultimatum game, a confederate was used. In addition, participants were led to believe that they would be paid according to the outcome of the ultimatum game. However, as the other participant in the lab was a non-participating confederate, and all allocations were rejected, participants did not receive any money. The study was designed in such a way mainly because we did not have the funds to pay participants according to the outcome of a 100 NOK ultimatum game. It is important to note that participants were first informed about the possibility of financial incentives after they had agreed to participate in the study. The possibility of winning money was therefore not used to attract people into participating in the study. However, it can be argued that the design of Study 1 was unnecessarily deceiving, as it looks like a design with the absence of a confederate and a much smaller financial incentive (i.e., Study 2) produced the same results. This is

problematic because this can lead to contamination of the participant pool (Hertwig & Ortmann, 2001). By contamination it is meant that participants no longer trust experiments in judgement and decision making, which then can alter their behaviour in these experiments. However, from an ethical point of view, studies have shown that participants do not feel hurt after they have been deceived. Conversely, participants seem to enjoy experiments that use deception more than non-deception experiments (Christensen, 1988). When participants in Study 1 were debriefed, they also expressed that they were not offended in any way by the deception; many thought the design was very clever and they were glad to have been a part of it. In addition, great importance was put on debriefing the participants properly and a thorough debriefing form was given (see Appendix H for the debriefing form in Norwegian).

Conclusion

Schadenfreude is the experience of satisfaction when other people fail. Previous research has shown that when one feels schadenfreude, this serves as information for the schadenfroh person that he or she can also experience a misfortune. Therefore, when feeling this emotion, people tend to choose more secure, conventional options (Kramer et al., 2011). The present study therefore wished to further explore the effects of schadenfreude on decisions and looked at how this emotion affects decisions made in the ultimatum game and decisions involving risk. However, when these studies did not find any differences in decisions, a direct replication of Kramer et al.'s (2011, Study 1) study was conducted. This study found that participants in the schadenfreude condition chose the extreme option more often compared to the control condition, which was the opposite of Kramer et al.'s (2011) results. As it is difficult to conclude whether participants felt schadenfreude in this study, more research should be conducted in order to investigate the effects of schadenfreude on decisions.

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Appendix A – Links to videos used in the pre-test

Video	Link	Length
Video 1	https://www.youtube.com/watch?v=NqbKN8VgdME	2:59 min
Video 2	https://www.youtube.com/watch?v=3Pp493qUB9A	3:10 min
Video 3	https://www.youtube.com/watch?v=42pQDt0BOUU	0:19 min
Video 4	https://www.youtube.com/watch?v=POt4I6UxwzM	0:47 min
Video 5	https://www.youtube.com/watch?v=MkCsZZtBEhw	0:25 min
Video 6	https://www.youtube.com/watch?v=k-vZmO0TxA	0:15 min
Video 7	https://www.youtube.com/watch?v=PbGPKhb8ZBI	0:26 min
Video 8	https://www.youtube.com/watch?v=lj3iNxZ8Dww	0:48 min

Appendix B – Norwegian translation of the schadenfreude and sympathy scale

Schadenfreude	
<i>English</i>	<i>Norwegian</i>
I enjoy what happened to...	Jeg gledet meg over det som skjedde med...
I'm satisfied with what happened to...	Jeg er tilfreds med det som hendte...
I couldn't resist a little smile	Jeg kunne ikke la vær å smile litt
I actually had to laugh a bit	Jeg måtte faktisk le litt
I feel schadenfreude	Jeg føler skadefryd
Sympathy	
<i>English</i>	<i>Norwegian</i>
I commiserate with ... about what happened	Jeg har medfølelse for det som skjedde med...
I feel sorry for what happened to...	Jeg synes det som skjedde med ... var synd
I sympathize with...	Jeg føler sympati med...

Appendix C – Links to videos used in Study 1 and Study 2

Video	Link	Length
Schadenfreude	https://www.youtube.com/watch?v=POt4I6UxwzM	0:47 min
Neutral	https://www.youtube.com/watch?v=tREjzV2doz4	0:59 min

Appendix D – Instructions given in the ultimatum game in Study 1 (Norwegian) and Study 2 (English)

English

You have been randomly assigned the role of **Player 1**. Your task is to divide **1 dollar** between you and the other participant you have been paired with. The other participant has been assigned the role of **Player 2** where his/her task is to decide whether to **accept or reject** the division made by you.

If **Player number 2** accepts your division then the both of you will receive the amount of money according to your division. However, if **Player 2** rejects your division both of you will receive no money.

This is a one-shot game. This means that you divide the money **once**, and then the game is over.

Norwegian

Du har blitt tilfeldig valgt til å være **spiller nummer 1**. Din oppgave er å fordele **100 kr** mellom deg og spiller nummer 2. Dersom spiller nummer 2 godtar fordelingen din, så får hver spiller summen som er foreslått. Hvis spiller nummer 2 avslår fordelingen så får ingen av spillerne noe.

Du får bare spille en runde. Dette betyr at du får fordele pengene bare **en** gang, så er spillet over.

**Appendix E – Norwegian translation of the economic Asian disease problems used in
Study 3**

Gain frame

English

Imagine you have invested 600 000 NOK in a company that is now threatened by bankruptcy. You consult a broker and he says that you have two possible strategies for handling the situation, Strategy A and Strategy B.

The broker describes the strategies in this way:

- With Strategy A, 200 000 NOK will be saved for sure.
- With Strategy B, there is a 1/3 probability of saving the whole sum of 600 000 NOK, and a 2/3 probability that nothing will be saved.

Which strategy will you choose?

Norwegian

Tenk deg at du har investert 600 000 kr i en bedrift som er på randen av konkurs. Du rådfører deg med en aksjemegler og han sier at du har to strategier å velge mellom, Strategi A og Strategi B.

Aksjemegleren beskriver strategiene slik:

- Med Strategi A vil 200 000 kr bli reddet helt sikkert.
- Med Strategi B er det 1/3 sjanse for at hele summen på 600 000 kr vil bli reddet, og 2/3 sjanse for at ingenting vil bli reddet.

Hvilken strategi vil du velge?

Loss frame

English

Imagine you have invested 600 000 NOK in a company that is now threatened by bankruptcy. You consult a broker and he says that you have two possible strategies for handling the situation, Strategy A and Strategy B.

The broker describes the strategies in this way:

- With Strategy A, 400 000 NOK will be lost for sure.
- With Strategy B, 1/3 probability that nothing of the 600 000 NOK will be lost, and a 2/3 probability that the whole sum will be lost.

Which strategy will you choose?

Norwegian

Tenk deg at du har investert 600 000 kr i en bedrift som er på randen av konkurs. Du rådfører deg med en aksjemegler og han sier at du har to strategier å velge mellom, Strategi A og Strategi B.

Aksjemegleren beskriver strategiene slik:

- Med Strategi A vil 400 000 kr bli tapt helt sikkert.
- Med Strategi B er det 1/3 sjanse for at ingenting av de 600 000 kr vil bli tapt, og 2/3 sjanse for at alt vil bli tapt.

Hvilken strategi vil du velge?

Appendix F – Norwegian translation of the anticipation of unfavourable outcomes scale used in Study 3.

<i>English</i>	<i>Norwegian</i>
If something goes wrong for me, it will	Hvis noe kan gå galt for meg, så vil det skje.
Things never work out the way I want them to	Ingenting går som jeg vil at det skal gå.
I rarely count on good things happening to me	Jeg tror sjelden på at bra ting kommer til å skje med meg.

Appendix G – Consumer task used in Study 4

Imagine that you are in need of a pair of binoculars.

You have three different binoculars to choose from, which are:

- Binocular pair 1 has the highest magnification power and is the heaviest.
- Binocular pair 2 has the lowest magnification power and is the lightest.
- Binocular pair 3 has average magnification power and is average in weight.

Which binocular pair would you choose?

Appendix H – Debriefing form used in Study 1

DEBRIEFING

Referanse nummer fra Department of Psychology's Research Ethics Committee: 875929

Du har nå deltatt i en studie om effekten av emosjoner på individers beslutninger. Det er to betingelser i denne studien; en kontroll og en eksperimentell. I kontrollbetingelsen vises nøytrale videoer, og i den eksperimentelle betingelsen vises morsomme videoer som skal indusere skadefryd. Vi ga inntrykk av at dette var to separate eksperimenter (vurdere videoer og ultimatumspillet), men dette var egentlig et eksperiment. Studien er lagt opp slik for å sikre at deltagerne ikke skal være oppmerksomme på kilden til sine følelser under ultimatumspillet.

Skadefryd er glede eller nytelse over andres motgang eller ulykke. Det er en helt naturlig og menneskelig følelse som de fleste opplever jevnlig. Tidligere studier har vist at skadefryd kan påvirke hvilke beslutninger man tar (Kramer, Yucel-Aybat & Lau-Gesk, 2011), ved at deltagere velger sikre alternativer når de føler skadefryd. De argumenterer for at den underliggende årsaken til dette er at deltagerne er redd for å bli utsatt for andres skadefryd.

Av den grunn ønsker vi i denne studien å undersøke om skadefryd fører til en mer generøs fordeling av penger i ultimatumspillet. Ettersom vi kun er interessert i hvordan spiller 1 fordeler pengene, har du ikke blitt tilfeldig valgt ut som spiller 1. Spiller 2 er ikke en deltager, men slik eksperimentet er programmert. Vi hadde en medsamsvoren som satt på en annen pc, men denne personen gjorde noe helt annet. Dette ble gjort fordi tidligere studier har vist at både det å se hvem man spiller mot og økonomiske insentiver får deltagere til å anstrenge seg mer i spillet (Hertwig & Ortmann, 2001).

Det er viktig for oss å understreke at det ikke var et menneske som var spiller 2. Programmet ville avslått ditt tilbud uansett hva det var, på grunn av manglende forskningsstøtte. Det var altså ingen som «hevnet» seg på deg fordi de syntes du gav dem et dårlig tilbud, og ingen som gledet seg over å avslå tilbudet du ga. Det er heller ingen som vet hvilket tilbud du kom med. Vi forstår frustrasjonen av dette bedrageriet, men vi håper at du forstår hvorfor vi måtte gjøre det. Som takk ønsker vi å tilby deg en liten sjokolade.

Vi setter stor pris på om du ikke forteller andre potensielle deltagere om formålet med denne studien.

Dersom du har noen spørsmål eller kommentarer til studien er du hjertelig velkommen til å ta kontakt med Anine Riege (a.c.riege@psykologi.uio.no) eller Johanna Blomster (johannbl@student.sv.uio.no).

Tusen takk for din deltagelse! ☺

Nyttige referanser

- Hertwig, R. & Ortmann, A. (2001). Experimental practices in Economics: A methodological challenge for psychologists? *Behavioral and Brain Sciences*, 24, 383+.
- Kramer, T., Yucel-Aybat, L., & Lau-Gesk, L. (2011). The effect of schadenfreude on choice of conventional versus unconventional options. *Organizational Behavior and Human Decision Processes*, 116, 140-147. doi: 10.1016/j.obhdp.2010.11.010
- Smith, R. H., Powell, C. A. J., Combs, D. J. Y., & Schurtz, D. R. (2009). Exploring the when and why of schadenfreude. *Social and Personality Psychology Compass*, 3, 530-546. doi: 10.1111/j.1751-9004.2009.00181.x
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