

Investigating Narcissism and Escalation in Aggression

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by

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Abstract

Research has linked narcissism to a tendency for becoming aggressive based on the perspective that narcissistic people are more prone to ego-threats and more prone to responding defensively to those ego-threats. Also, recent research has been examining the propensity for aggression to escalate as a means to justify prior aggression. This study examined the relationship between narcissism and escalation in aggression and possible mediators of increased aggression. If highly narcissistic individuals are more vulnerable to ego-threats and in turn justify their actions more, then their aggression might escalate more. To examine this, sixty-seven subjects who completed the Narcissistic Personality Inventory prior to the laboratory session were assigned to two groups using a bug-extermination method (though no bugs were actually killed) developed by Martens and his colleagues (in press). They either killed one or five bugs initially and then conducted a subsequent bug-killing task in which they controlled the number of bugs they killed. As predicted, participants who killed five bugs initially killed more bugs during the subsequent bug-extermination task than those who killed only one bug initially. Contrary to predictions, no effects of or interactions of narcissism with the initial bug-killing manipulation emerged. We did find, however, that a subtype of narcissism, that is superiority, affected the self-paced 20 seconds bug-killing behaviour. The limitations, further directions, and implications of this study are discussed.

Introduction

Violence is an enormous problem and certainly does not seem to be lessening in our world. Domestic violence, child abuse, school bullying, school shootings, and genocide are all relevant examples of problematic aggressive behaviours. In Japan, nowadays, the increase of cruelty in aggressive behaviour is a serious social issue. For example, a small quarrel between school friends resulted in a homicidal incident where an 11 year old girl had her jugular cut by her classmate during a lunch-break (“Shouroku Satsujin, Kenkoukousoutaikaijyoh de kiku”, 2004). Why can people be so aggressive? What motivates them to escalate their aggression so maliciously?

Many researchers in psychological fields have been contributing to current research to provide plausible explanations of underlying psychological mechanisms of aggression (e.g. Baumeister, Smart & Boden, 1996; Brown, 2004; Bushman, Bonacci, Dijk, & Baumeister, 2003; Kernis, Grannemann, & Barclay, 1989; Washburn, McMahan, King, Reinecke, & Silver, 2004). Although some forms of violence are conducted as rational and instrumental behaviour aimed at securing or protecting material rewards, much human aggressive behaviour resulting in catastrophic outcomes, such as rape, domestic violence, war, mass murder and genocide, seems to occur in part

as a result of ego threats and self-esteem threats (e.g. Baumeister et al, 1996). One of the major perspectives to frame this type of human aggression is the notion of narcissism. Indeed, there is extensive literature documenting the relationships between narcissism and aggressive behaviour in adults. Research shows a relationship between narcissism and hostility as measured by various hostility scales (Raskin, Novacek, & Hogan, 1991), dominance (Twenge & Campbell, 2003), accomplishment of vengeance (Brown, 2004), and expression of anger (Papps & O'Carroll, 1998; Rhodewalt & Morf, 1998; Stucke & Sporer, 2002). Moreover, Ang and Yusof (2006) found that children with a high level of narcissism reported stronger needs for dominance and power over their peers.

Recent research has been examining not only the general aspects of aggression but also the specific propensity for aggression to escalate. Lifton (1986) suggested that aggression tends to escalate because people continue to aggress in order to justify their initial aggression, which is often regarded as threats to their self-esteem. Based on this perspective, Martens and his colleagues (in press) demonstrated that the more severe initial aggression, the harsher the subsequent aggression is.

Despite the remarkable amount of work investigating the relationship between narcissism and aggression, no systematic study has been done to examine narcissism in relation to escalation in aggression. Therefore, the present research examines possible

effects of narcissistic personality traits on escalation of aggression in a laboratory setting. In particular, this study tests the hypothesis that people high in narcissism tend to escalate more in subsequent aggression in order to justify their initial aggression than as compared to low in narcissism.

Narcissism and Aggression

According to the *Diagnostic and Statistic Manual of Mental Disorders IV* (American Psychiatric Association, 1994), narcissists display an embroidered sense of grandiosity, self-importance, superiority, entitlement, exploitativeness, authority, arrogance, and lack of empathy. Several empirical studies have documented the correlation between these characteristic of narcissism and aggression. For example, Washburn and his colleagues (2004) demonstrated that narcissistic exploitativeness positively correlated with proactive aggression. In a study of sexual coercion, Bushman, Bonacci, Dijk, and Baumeister (2003) also showed a connection between the narcissistic propensities, such as low empathy and an inflated sense of entitlement, and rape-supportive beliefs.

Aggression from Ego-Threats

Examining the potent relationship between narcissism and aggression, Baumeister, Smart and Boden (1996) proposed that threatened egotism is a crucial cause of aggression (Bond, Ruaro & Wingrove, 2006; Bushman & Baumeister; 1998; Bushman et al., 2003). According to this hypothesis, individuals with inflated self-views are more likely to receive disconfirmation of self-appraisals, which they regard as an ego-threat, resulting in aggressive reactions to re-establish their self-esteem and self-concept (Baumeister et al., 1996). For example, In a study conducted by Bond and his colleagues (2006), people rejected unfavourable feedback and sustained a more favourable self-appraisal by expressing anger towards the source of the negative evaluation.

Similarly, a self-regulatory model proposed by Morf and Rhodewalt (2001) posits that narcissistic individuals focus on the maintenance of their inflated self-esteem and self-concept through interpersonal and intrapersonal mechanisms, which enhance the propensity of narcissists' aggressive reactions towards unfavourable evaluations from others in order to sustain self-knowledge of a grandiose self. Facing an ego threat might activate their aggressive reactions in order to restore their self-esteem. Or put differently, attacking/reproaching the source of the threat may be an adaptive and

defensive mechanism to regulate mood and behaviour (Twenge & Campbell, 2003).

Unstable Self-esteem & Narcissism

Some researchers have proposed that variability of self-esteem or unstable self-esteem in narcissism is a key component in the link between narcissism and aggression (Ang & Yusof, 2005; Bushman et al., 2003; Bushman & Baumeister, 1998; Rhodewalt, Madrian, & Cheney, 1998; Rhodewalt & Morf, 1998; Stucke, 2003; Wahburn et al., 2004; Zeigler-Hill, 2006). According to Kernis, Grannemann, and Barclay (1989), variability of self-esteem is regarded as the magnitude of short-term fluctuations in ongoing self-evaluation reflecting a psychological disposition and indicating fragile self-esteem. These individuals regard negative feedback as a threat to their fragile self-views and seek to re-establish more stable and secure self-views in aggressive manners, becoming angry and attacking the credibility of the source of the evaluation. Stable individuals, on the other hand, tend to discount the effects of negative evaluation allowing them to maintain their level of self-esteem without such hassle (Zeigler-Hill, 2006). This pattern may occur because individuals with unstable high self-esteem have the most to lose from a threat of self-esteem compared with individuals with stable high self-esteem. In support of this idea, a laboratory study

conducted by Kernis and his colleagues (1989) shows that unstable high self-esteem predicts the experience of anger compared with stable high self-esteem.

In addition, work links narcissism to unstable self-esteem. Rhodewalt, Madrian, and Cheney (1998) examined the fluctuation of self-esteem in narcissistic people based on the data of daily experiences and emotional reactivity on five consecutive days. This study demonstrated that narcissistic individuals present greater day-to-day changes of self-esteem, mood swings, and greater mood intensity than less narcissistic people. A study conducted by Rhodewalt and Morf (1998) also showed that highly narcissistic individuals display a greater fluctuation in mood and self-esteem. Furthermore, this fluctuation predicted a stronger propensity to express anger and aggression as a defence against depressive affect and cognition caused by negative social evaluations, such as disapproving performance feedback.

Attribution Bias among Narcissists

The attribution process for narcissists may also help explain their propensity to become aggressive. Weiner (1985) explained that people activate certain emotional reactions immediately after receiving an outcome or social evaluation (either positive or negative) from others, and then explore any plausible explanation of the outcome

(attribution), which produces further affect (as attribution-dependent emotion, e.g. rage or anxiety). To maintain a positive self-image, in general, people tend to make external attributions for undesirable outcomes and internal attributions for desirable outcomes (Bond et al., 2006; Brown, 2004). In this context, perceiving a greater ego-threat, as narcissists tend to do, should amplify such an attribution bias. In other words, narcissists appear increasingly self-serving in their attributions (Bond et al, 2006; Emmons, 1987; Stucke, 2003). For example, Rhodewalt and Morf (1998) claimed that people with high scores on the Narcissistic Personality Inventory attribute successful outcomes more to their own ability than less narcissistic people. Stuke (2003) demonstrated that highly narcissistic individuals tend to show external attribution for failure feedback and internal attribution for positive feedback. Furthermore, Campbell, Reeder, Sedikides, and Elliot (2000) conducted a study to examine the possible relationships between narcissism and comparative self-enhancement strategies, which refers to favourably comparing the self with other people, such as blaming a co-worker for a failed task outcome. They found that people high in narcissism, compared to those low in narcissism, relied more on comparative self-enhancement strategies after receiving negative feedback (Campbell et al., 2000).

In sum, due to the fragile/fluctuating self-esteem of narcissists, highly

narcissistic people are more likely to attribute negative feedback externally, which can lead to aggressive behaviour and reactions to the source of evaluation (e.g. evaluators). On the other hand, they internalise positive feedback for self-enhancement (Campbell, Goodie, & Foster, 2004; Campbell, Foster, & Brunell, 2004; Stucke, 2003).

Escalation in Aggression as Justification for Initial Aggression

Although the body of research presented above links narcissism to aggression particularly in instances of initial acts of aggression, recent research has investigated a specific tendency for aggression to escalate. Theorists such as Lifton (1986) propose an explanation for this effect—that aggression begets aggression as a means to justify the earlier aggression. Unjustified aggression often appears to pose a threat to people. For example, soldiers unable to justify their aggressive behaviours are often those left most traumatized following the conflict (MacNair, 2005). This may occur in part because aggression can be regarded as morally unacceptable or as a sign of a cruel person. Thus, such an escalation of aggressive behaviour may emerge, partly, as a defence mechanism against the threat induced from the initial aggressive action.

According to Festinger's (1957) cognitive dissonance theory, people tend to actively justify their attitude-discrepant behaviour. The theory suggests that when

people face a discrepancy between behaviour and attitudes, which yields an uncomfortable state of tension, they are motivated to reduce the undesirable feeling of inconsistency with justification processes. Therefore, the active search to justify aggressive behaviour can be regarded as one practical way to protect an individual's mental and cognitive stability. This is evidenced in several empirical studies showing that people tend to justify their aggressive behaviour, (Fujihara, Kohyama, Andreu, & Ramirez, 1999; Ramirez, Bonniot-Cabanac, & Cabanac, 2005), such as aggression towards dating partners (Chase, Treboux, O'Lrory, & Strassberg, 1998; O'Leary & Slep, 2003; Muñoz-Rivas, Graña, O'Leary & González, 2007), aggression towards school peers (Slaby & Guerra, 1988), and aggressive physical contact in sports events (Mintah, Huddleston, & Doody, 1999).

A typical example of justification for aggressive behaviours might be found in the process of dehumanisation. According to Castano and Giner-Sorolla (2006), perceiving another person as human stimulates a sense of empathy resulting in hesitation of mistreating them without personal distress. However, dehumanisation of others diminishes such a self-sanction for the mistreatment of other humans. In war-fields, derogating enemies is regarded as one of the effective ways for soldiers to reduce the sense of repugnance of killing other humans (Castano & Giner-Sorolla,

2006). Also, in a study of transgressive behaviour, Bandura and his colleagues (2001) demonstrated that dehumanisation is often accompanied with a moral disengagement, indeed, invigorating escalation in aggression.

Thus, justifying aggressive conduct may be regarded as a critical component for the escalation of aggressive behaviours. In other words, an individual's aggression might escalate subsequently due to the justification of their initial aggression in order to diminish psychological discrepancy between their attitudes and behaviours and maintain their favourable self-concepts.

No studies, however, have examined narcissism in relation to people's tendencies to escalate in their aggression. But it seems plausible that narcissism should also predict escalations in aggression, in addition to initial acts of aggression. It can be assumed that narcissists might be more actively motivated to justify their aggressive behaviors because high narcissistic individuals tend to exhibit self-serving attributions (Bond et al, 2006; Stucke, 2003). In other words, given the relatively strong tendency for high narcissistic people to justify a negative evaluation and feedback by rejecting or attacking the source of the feedback (distorting their cognitions in order to keep unpleasant feeling out of their consciousness) as compared to low narcissistic people, narcissists might be more likely to justify their aggressive actions more actively and

insistently with continued and perhaps increased aggression. Thus, they actively help demonstrate that their initial actions were reasonable and conscionable.

The Present Study

The present study investigated the possibility that high narcissistic people are more likely to increase their level of aggression after aggressing more initially. To test this hypothesis, I used a recent method developed by Martens et al. (in press) to examine escalation in killing. Specifically, they studied this escalation in killing by examining supposed bug-killing. In this experiment, participants were divided into two groups and led to believe they were either killing five bugs or one bug. After this initial killing manipulation, participants were asked to conduct an “extermination task” by depositing bugs into a grinder, one by one, for 20 seconds. The experimenters measured how many bugs each participant exterminated. Importantly, the extermination machine was modified to prevent bugs from being killed. Their basic finding showed that killing behaviour tended to escalate —that the more people were induced to kill bugs initially, the more they tended to kill bugs subsequently in the more voluntary timed “extermination task”. To assess the levels of narcissism in participants, the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988, adopted from Raskin & Hall, 1979)

was administrated prior to the laboratory experiment.

Consistent with the prior work on narcissism and aggression, I predicted that highly narcissistic people would kill more bugs than less narcissistic people in general. In addition, I predicted that highly narcissistic individuals would display the highest level of escalation in subsequent bug-killing. In other words, I expected people with low level of narcissistic traits to minimally escalate in their killing, but high narcissistic individuals to escalate more severely in their bug-killing—that is these individuals would show the most pronounced increases in killing due to killing more bugs initially.

Furthermore, I examined possible mediator of the effects of initial killing on self-paced killing, namely justification of the initial killing. To do this, just after the initial killing, I investigated the degree to which (1) participants perceive themselves as similar to bugs, (2) participants feel it is wrong to kill bugs.

I predicted that the more bugs participants killed initially, the less they might perceive themselves as similar to small bugs. This means that the lesser similar people perceived themselves to bugs, the more they might kill bugs. This might be because they would distant themselves from small bugs as their target and try to justify their own aggressive behaviours by dehumanisation.

Also, I predicted that participants in the initial five bugs-killed condition might feel less that it is wrong to kill small bugs. I assume that these could be an evidence of justification for their initial aggression (initial bug-killing). In turn, feeling it is more acceptable to kill small bugs might facilitate escalation of the subsequent aggression (more self-paced bug-killing).

Furthermore, I examined the degree to which participants need to feel dominant as another possible mediator. I predicted that participants who killed five bugs initially, compared to those who killed one bug initially, might need more to feel dominant immediately after the initial bug-killing manipulation because the initial bug-killing manipulation might be regarded as an ego-threat by participants. In turn, the greater the need for dominance, the more I would predict people kill bugs during the 20-second extermination task. Therefore, they might show a sign of their needs of justification for their initial aggression.

Method

Participants and Design

Ninety-two participants were recruited mainly from the University of Canterbury in New Zealand by emailing class lists. They volunteered for the study in return for a five dollar voucher that could be used at campus stores or a local supermarket. Twelve participants withdrew from this experiment after reading the consent form. The data from 13 participants were excluded from the analysis due to the strong suspicions about the experimental procedure. This was because they realised that the experimenter would count the number of bugs participants exterminated in 20 seconds (eight participants) or they doubted that the bugs were actually killed (five participants). Therefore, the final study sample consisted of 67 subjects (23 male, 42 female, and 2 unspecified) with a mean age of 24.78 years ($SD=7.12$) ranging from the age of 18 years to 45 years. Participants were randomly assigned to one of the two groups, either killing only one bug initially or killing five bugs initially.

Procedure and Materials

The message of the e-mail contained a brief introduction recruiting people for a 45 minute study in exchange for a five dollar voucher. When people replied to

participate, the experimenter explained in a second e-mail that “*my central interest in this study is personality traits and human behaviour and interactions*”. To measure narcissism, the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988, adopted from Raskin & Hall, 1979) (see Appendix A) was attached to the e-mail requesting that, as a preliminary step for participation, participants first complete the attached personality questionnaire and then e-mail it back. The NPI consists of a 40-item, forced-choice questionnaire and is one of the most widely used measures of narcissism in psychological studies investigating non-clinical populations, and shows good reliability and validity (Ang & Yusof, 2006; Brown, 2003; Bushman & Baumeister, 1998; Otway & Vignoles, 2006; Zeigler-Hill, 2006). Participants were asked to simply choose true or false for each statement according to their feelings and opinions. Examples of these items from the NPI are: “If I ruled the world it would be a much better place” and “The thought of ruling the world frightens the hell out of me”.

In addition to this NPI scale, the experimenter acquired several other pre-measures to explore other possible moderators of escalation in aggressive behaviour (i.e. bug killing). In particular, we included measures of self-esteem, perceived similarity to insects, quality of family relationships during childhood, and current (adulthood) attachment style. To measure self-esteem, the Rosenberg Self-Esteem Scale

(RSES: Rosenberg, 1965) was employed. The RSES is a well-validated scale of global self-evaluations and consists of 10 questions rated with a 5 point scale (1=strong agree, 5=strong disagree). To assess perceived similarity to insects, the experimenter used a question developed by Martens and his colleagues (in press) asking participants, on a 9-point scale (1=not at all similar, 9=extremely similar), how similar they think they are to small insects. To examine the quality of family relationships during childhood, the participants were asked to complete a 15-item questionnaire developed by Otway and Vignoles (2006) measuring recollections of parental indifference, coldness, rejection, dependability, and overvaluation during childhood with a 7-point scale (1=strongly disagree, 7=strongly agree). Finally, to examine the current attachment styles of participants, the Experiences in Close Relationships Inventory (ECRI: Brennan, Clark, & Shaver, 1998) was used, which consists of 36 items to be rated using a seven-point scale.

In this pre-measure email, participants also received an information sheet, which noted that all responses would be confidential. After participants e-mailed back their responses to the NPI, RSES, the question of perceived similarity, the family relationships questionnaire, and the ECRI, they were provided with a list of open time slots to sign up for the experimental session.

The experimental session

When participants arrived at the laboratory individually, they were escorted to a table and chair placed at the middle of the room, and provided with the cover-story for the experiment. Adapted from the procedure used in a similar previous study (Martens et al., in press), the experimenter explained that *“as I mentioned in the e-mail, I am interested in human interactions with non-human species, and specially investigating any possible influences of different types of occupational roles with animals. In this particular session, I am looking at the role of pest controllers who need to deal with small insects and bugs. So, in this study, I am going to ask you to conduct a short bug-extermination task.”* This cover-story was a method of reducing suspicion about the true purpose of the bug-killing task—that it was a means to assess aggression. After this introduction, participants were informed that they would be asked to complete several questionnaires during the study as well. At this point, a consent form was distributed to each participant mentioning the confidential nature of the study and their right to withdraw from the study at any time without penalty.

The initial killing manipulation

Once participants signed the consent form, they were escorted to the corner of

the laboratory room to a table with the materials and equipment for the extermination task. On the table was a plastic coffee grinder that had been transformed into a bug-extermination machine. This machine had a plastic tube attached to the side of the blades bowl curving upward vertically. The tube was blocked at its base, however, so that no bugs reached the grinder blades. A white plastic funnel was put into the opening of the tube for participants to dump the bugs into easily. The machine had a start button that activated the grinder. In addition, small pieces of paper were inserted into the grinder to replicate the sounds of “exterminating” bugs. Therefore, participants did not kill bugs though it appeared so to them. The Bug that we used in this experiment was slater, which is called woodlice and approximately one centimetre length. Beside the extermination machine, a flat 47 centimetres \times 37 centimetres plastic tray with either 21 or 25 clear, 50 ml plastic cups was positioned. Each cup contained a slater. The number of cups depended on the condition that participants were randomly assigned to, that is 21 cups for participants who killed one bug initially and 25 cups for participants who killed five bugs initially.

At the table, the experimenter pointed out the grinder and explained to participants that the grinder was used as the extermination machine in this study because poison sprays that pest controllers normally use to deal with pests were not

permitted inside of the Psychology building due to health and safety reasons. Furthermore, participants were provided with another cover-story that ground bugs would be used profitably for a research study in the Biology Department. Specifically, participants were informed that the ground bugs would be used in an “assay” that allows biology researchers to study the concentration of the animal’s components, such as DNA and proteins. After this, the experimenter explained to each participant that before the actual extermination task they would be familiarised with the procedure. This familiarisation task was used to manipulate the independent variable, that is, the initial bug killing.

In the one-initial-bug-killed condition, the experimenter picked up one cup containing a bug from the plastic tray and asked participants to put the bug into the machine and then to press the start button for at least three seconds. In the initial five bugs-killed condition, participants did the same but with five bugs.

Following this familiarisation task, participants were guided back to the table and chair that they were first seated at and asked to answer three different questionnaires. These were used to investigate possible mediators of effects of the initial killing on the subsequent self-paced killing. The first set of questions investigated the degree to which participants would feel a need for dominance immediately after the

initial bug killing. These dominance questions were interspersed with others purportedly aimed at assessing Maslow's hierarchy of needs (1970). The needs questionnaire consisted of seven questions asking participants to rate, on a 9-point scale (1=not at all met, 7=completely met), the feeling that seven different needs, namely, physical needs, safety/security needs, needs of belongingness, needs of dominance, needs of knowledge, aesthetic needs, and needs of self actualisation, were met immediately after the initial bug killing task (see Appendix B). The second set of questions asked participants about their perceived similarity to the pill bugs that they had been working with. Participants were asked to rate (1=extremely different, 9=extremely similar) how similar/different they think they are to nine creatures, namely chimpanzees, dogs, cats, cows, snakes, chickens, goldfish, worms, and small bugs (see Appendix C). In the third set of questions, the experimenter assessed the degree to which participants felt it was wrong to kill small bugs, though they were embedded in similar questions pertaining to other animals again to minimize suspicion. The morally acceptable/unacceptable questionnaire asked participants to rate (1=completely morally unacceptable, 9=completely morally acceptable) how morally wrong they felt it was to kill each of ten animals, namely humans, chimpanzees, dogs, cats, cows, snakes, chickens, goldfish, worms, and small bugs (see Appendix D).

The subsequent bug-extermination task

After participants answered these questionnaires, they were guided back to the extermination table on which was the plastic tray of twenty bugs, each in its own plastic cup. Also, a digital timer was on the table to time 20 seconds for the bug extermination task. The experimenter asked each participant to start the timer after the experimenter left the room, and to deposit the bugs into the extermination machine one by one continuously for twenty seconds at their own pace. Participants were further instructed that when the alarm on the timer went off, they should then press the start button of the extermination machine to activate it for at least three seconds. After the completion of the experiment, the experimenter counted and recorded the number of bugs that the participant had placed in the grinder. This number served as the dependent variable in this study.

Once the extermination task was completed, participants were escorted back to the table and chair where they were first seated, and were asked to answer a post-study survey, which included questions about how much they would recommend this study to others in general (from 1=not at all to 9=completely), how much they would recommend this study to others as compared into a more typical psychology study (from 1=recommend less than a typical study to 9=recommend more than a typical study), and

the average number of bugs they thought other participants had exterminated in this study. In addition, participants were asked to answer questions about their backgrounds. They recorded their age, sex, academic major, and first language. At the end of the experiment, the true purpose of this study was sensitively explained to participants, and the experimenter discussed some potential applications to real world situations. The experimenter also emphasised that no bugs were killed in the extermination task. After the debriefing, a re-consent form was distributed to participants, and participants were instructed to read it through and sign it if they agreed to allow the experimenter to use their data. Finally, participants were given a five dollar voucher and dismissed.

Results

Preliminary Analyses

Testing the replication of the prior work

Prior research conducted by Martens et al. (in press) showed that the more people were induced to kill bugs initially, the more they tended to kill bugs subsequently in the more voluntary timed “extermination task”. To test whether this study replicated the result of Martens’ work, a t-test for independent means was conducted to examine whether the mean number of bugs killed in 20 seconds differed for those participants who killed one bug initially as compared to those who killed five bugs initially. This test revealed that participants in the five bugs-killed condition (N=37, M=7.97, SD=2.97) killed more bugs than participants in the one bug-killed condition (N=30, M=5.66, SD=3.03), $t(65)=3.13$, $p<.05$, and supported the main finding of Martens’ study. In other words, the initial killing manipulation influenced the self-paced killing (see Figure 1),

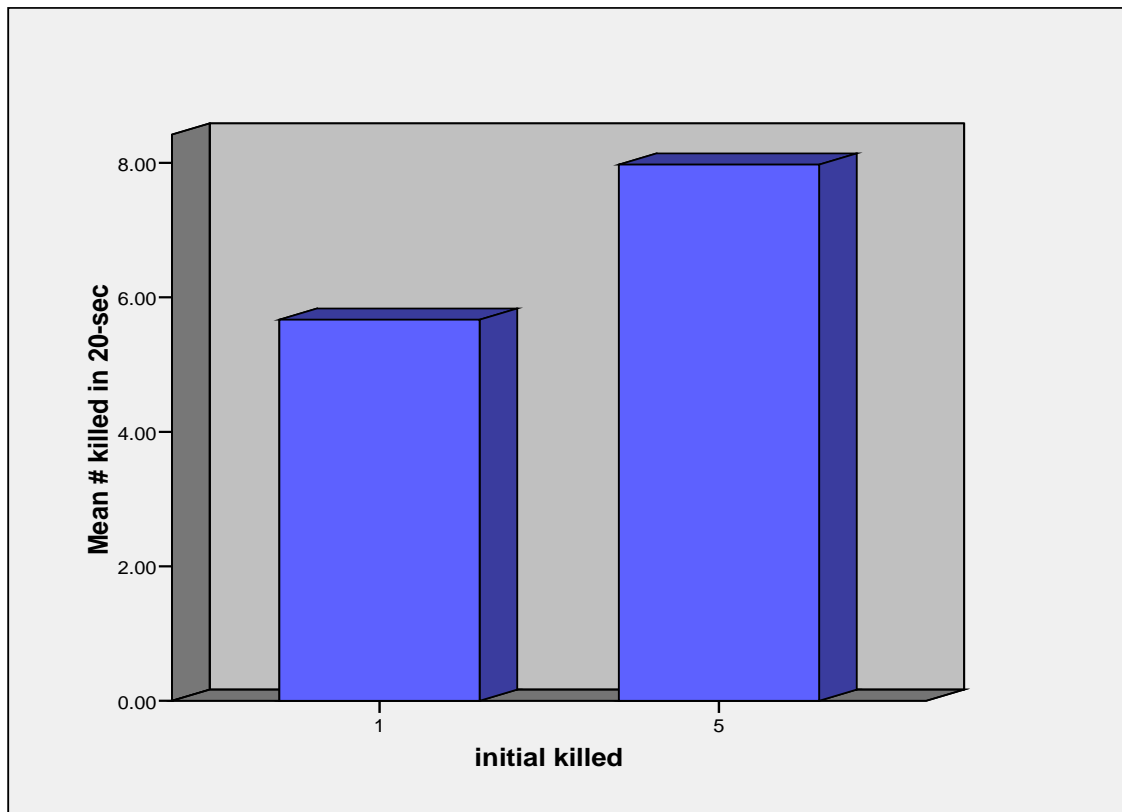


Figure 1: The effects of the initial killing manipulation on the subsequent killing

Effects of Gender Differences

Possible effects of gender differences on the subsequent bug-killing behaviours were investigated. A t-test of gender differences on the number of bugs participants killed in 20 seconds revealed that male participants killed more bugs during the self-paced bug-killing task (N=23, M=8.00, SD=3.44) than female participants (N=42, M=6.36, SD=3.00), $t(63)=2.00$, $p=.049$.

There were hardly any significant effects of gender differences on the results we had from the main analyses. The only exception was the effect of superiority on

the number of bugs participants killed in 20 seconds, demonstrating that gender differences led to eliminate the effect of superiority on the subsequent bug-killing behaviours among participants, $F(1, 61)=2.05, ns$.

Main Analyses

Do Narcissists Kill more bugs in general?

We hypothesized that, in general, highly narcissistic individuals would kill more bugs than participants low in narcissism during the self-paced 20 seconds bug-extermination task, no matter how many bugs (one vs. five bugs) they killed initially in the practice session. To examine this hypothesis, we used a median split to identify high versus low narcissists based on participants' total scores on the NPI. Then we conducted a t-test on the mean number of bugs killed by high and low narcissistic participants. The mean number of bugs killed by participants high in narcissism was 7.45 (SD=2.92). The mean number of bugs killed by those low in narcissism was 6.44 (SD=3.39). However, the t-test was not significant, $t(65)=-1.31, ns$.

We also further analysed seven sub-categories of the NPI, namely superiority, authority, self-sufficiency, entitlement, exploitativeness, vanity, and exhibitionism. Again, a median split was used to identify high versus low in these sub-categories.

Only the t-test for superiority was significant, $t(65)=2.00$, $p<.05$. Those high in superiority killed more during the 20 seconds ($M=7.61$, $SD=2.64$) than those low in superiority ($M=6.70$, $SD=3.66$). This means that levels of superiority, rather than other sub-types of narcissism, affected self-paced killing among participants (see Figure 2).

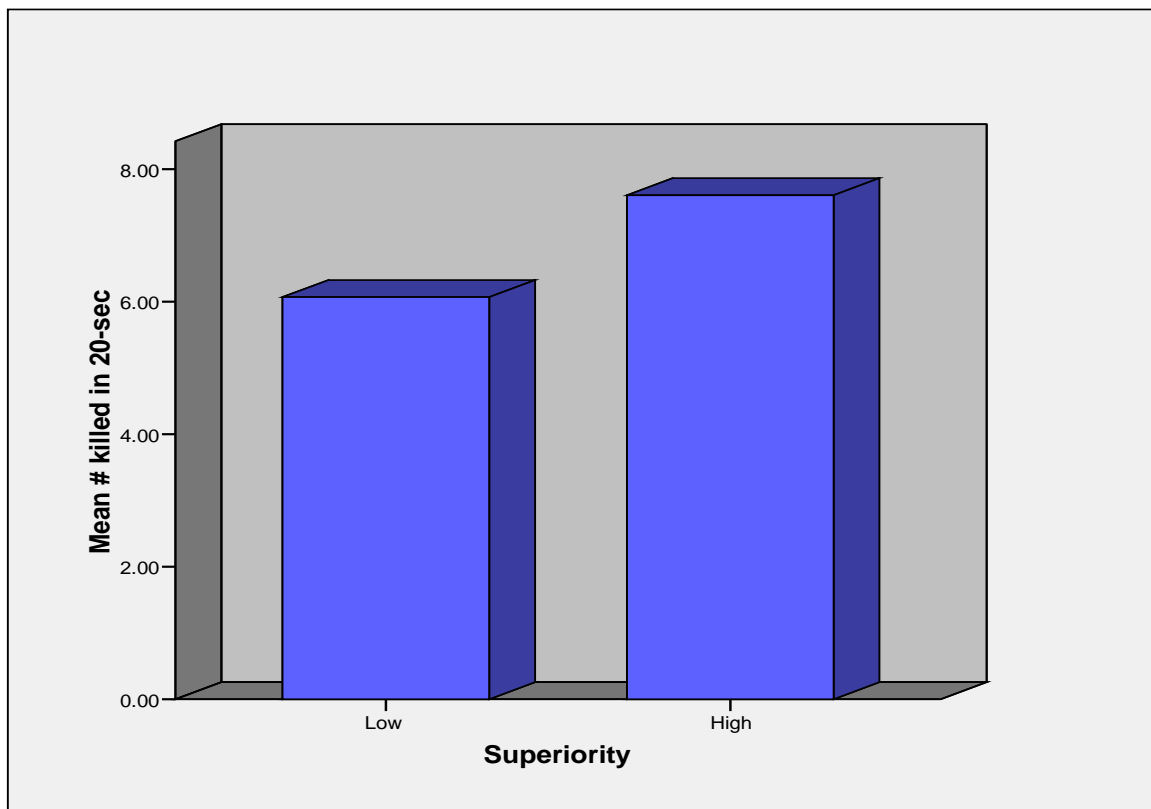


Figure 2: The effect of superiority on the subsequent bug-killing

Interaction between Narcissism and the initial killing on the subsequent self-paced killing

The second prediction of this experiment was that highly narcissistic participants would be most likely to kill more bugs after killing five bugs initially than

after killing one bug initially—that is, they would be the most prone to this escalation effect. High narcissistic people tend to possess fragile self-esteem which is vulnerable to ego-threats, and tend to justify their own actions if they are threaten to reflect poorly on themselves. Therefore, participants high in narcissism might regard killing five bugs initially, rather than killing only one bug, as more threatening to their ego, and so kill more bugs in 20 seconds than participants low in narcissism to justify their initial killing. .

To examine this hypothesis, a 2 (High or Low narcissism) \times 2 (initial killing: one vs. five) Analysis of Variance (ANOVA) on killing bugs in 20 seconds was conducted. As already presented with a t-test, a significant main effect of the initial bug-killing manipulation (one versus five bug(s) killed) emerged, $F(1,63)=9.34$, $p<.05$. However, there was no interaction between narcissism and the initial bug-killing conditions, $F(1, 63)=.02$, *ns*. High narcissists killed more bugs in 20 seconds after killing five bugs initially ($M=8.37$, $SD=2.81$) than after killing only one bug initially ($M=6.21$, $SD=2.69$), $t(31)=2.05$, $p<.05$. Similarly, those low in narcissism killed more bugs during the 20 seconds after killing five initially ($M=7.56$, $SD=3.14$) than after killing only one bug initially ($M=5.19$, $SD=3.31$), $t(32)=2.29$, $p<.05$. Again, killing five bugs initially led participants to kill more bugs in 20 seconds as compared to killing

only one bug initially, no matter the level of narcissism (see Figure 3).

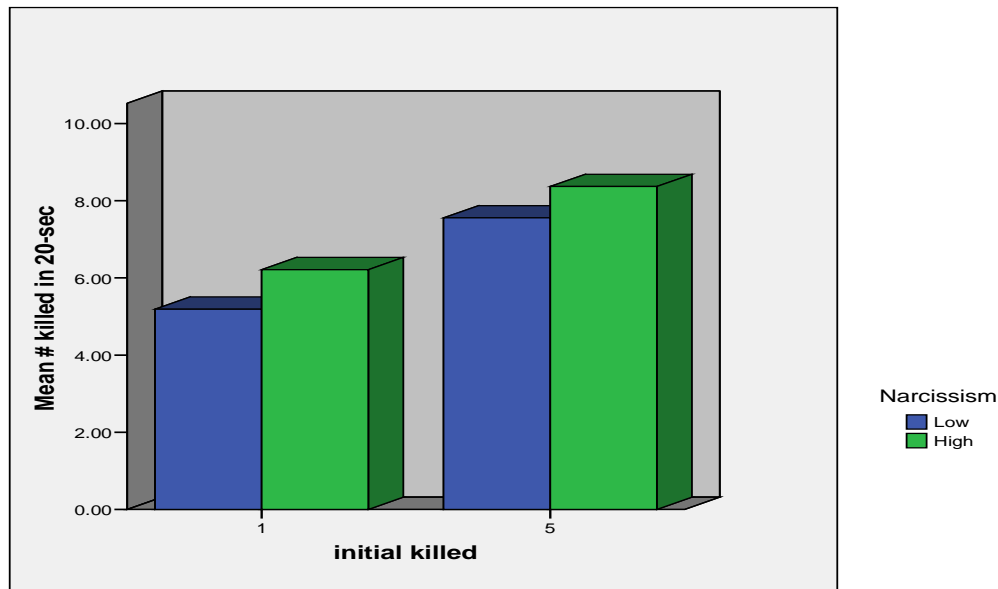


Figure 3: The interaction of narcissism with the initial killing manipulation on the subsequent bug-killing

We also conducted ANOVAs to look at the interaction between the initial killing condition and each of the seven sub-categories of the NPI, namely vanity, superiority, entitlement, exploitative, authority, exhibitionism, and self-sufficiency, based on a median split. Only the interaction between initial killing and the vanity subscale approached to significance, $F(1, 63)=3.23, p=.07$ (see Figure 4).

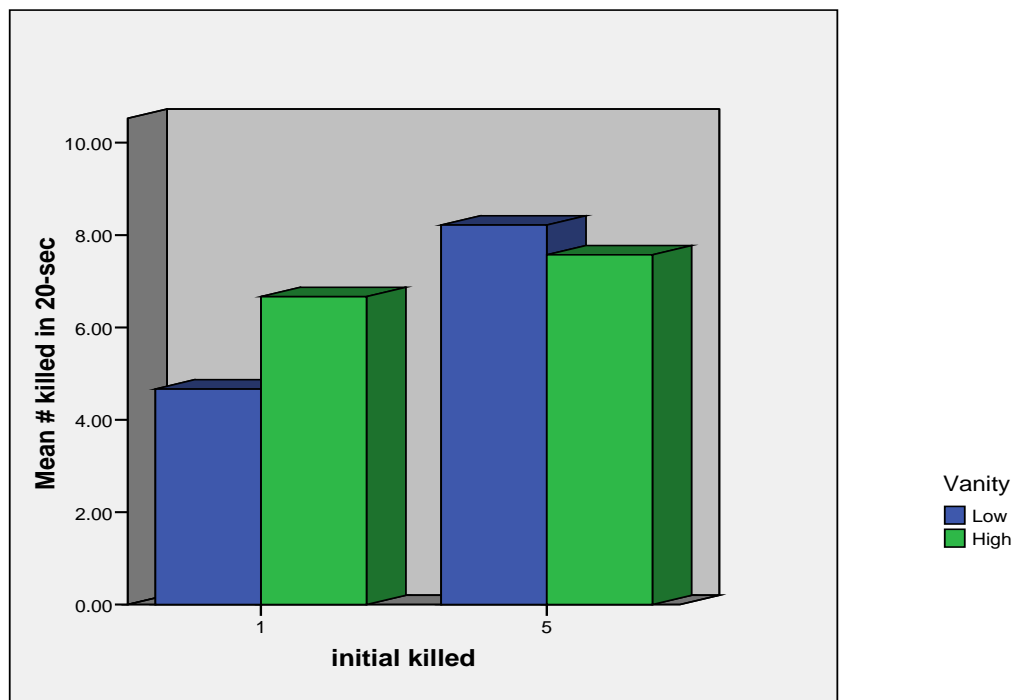


Figure 4: interaction of vanity with the initial killing manipulation on the subsequent bug-killing

Although participants high in vanity were expected to show a greater tendency for escalation in killing bugs than those low in vanity, a reverse effect was found. In other words, those high in vanity did not kill significantly more bugs in 20 seconds after killing five bugs initially ($M=7.57$, $SD=2.73$) than after killing one bug initially ($M=6.67$, $SD=2.60$), $t(27)=.82$, *ns*. But those low in vanity did kill more bugs during the self-paced bug-killing task after killing five bugs initially ($M=8.22$, $SD= 3.13$) than after killing one bug initially ($M=4.67$, $SD=3.18$), $t(36)=3.62$, $p<.05$. In general, narcissists have fragile self-esteem, which is prone to ego-threats. In this experiment, killing five bugs initially as an ego-threat would be strong enough to lower their self-esteem,

therefore, they were expected to become more aggressive by killing more bugs subsequently in order to recur their lowered self-esteem. However, since high vanity individuals could be too sensitive and vulnerable to ego-threats as compared to overall narcissistic people, for high vanity participants in the five bugs-killed condition, killing more bugs subsequently would be an ego-threat that might be regarded as too strong. Under such a situation, they might present a propensity to maintain their current level of self-esteem by killing fewer bugs consequently because they might think that the more killing bugs subsequently, the further lower their self-esteem might become. In the one bug-killed condition, the effect of the initial bug killing would not be too strong, therefore the subsequent self-paced bug killing would be regarded as a mean to re-establish self-esteem among high vanity participants. From this point of view, people high in vanity would kill more bugs in 20 seconds than those low in vanity.

Justification of Aggressive Behaviours

We found that killing five bugs initially led to more subsequent bug-killing than killing one bug initially. We also found that those who felt more superior as measured by the NPI subscale killed more during the 20 seconds. Thus, we followed up with these two effects to examine potential mediators of these effects.

Effects of initial killing on justification

First, we examined whether killing five bugs initially as opposed to one bug led people to justify what they had done. One way to examine potential effects of the initial bug-killing manipulation on justification for initial aggression among participants was to investigate whether killing more bugs initially led to viewing the killing of bugs as more morally acceptable. To do so, we conducted a t-test on the mean scores of the questionnaire asking participants immediately after the initial bug killing task to rate the degree to which they felt it was wrong to kill small bugs (higher score means that participants thought it was more morally acceptable to kill small bugs). However, we did not find a difference between those participants who killed five bugs initially ($M=6.32$, $SD=2.52$) and those who killed only one bug initially ($M=6.30$, $SD=2.55$), $t(65)=-.04$, *ns*.

Another manifestation of justification, of thinking that it was ok to kill the bugs, could be view the bugs as less similar to one's self. Therefore, we assessed whether killing five bugs initially as opposed to one bug led people to view small bugs as less similar to themselves. A t-test on the mean scores of the question asking participants to rate how similar/different they think they are to small bugs was conducted (higher score means that participants perceived themselves more similar to small bugs). Again, there

was no significant difference between participants who were in the initial five bugs-killed condition ($M=1.89$, $SD=1.46$) and those who were in the initial one bug-killed condition ($M=2.07$, $SD=2.02$), $t(65)=.41$, *ns*.

Effects of superiority on justification

We also examined whether high superiority resulted in attitudes that would help justify the bug-killing. People who feel strong superiority may view other animals as less worthy of life and/or less similar, and this could facilitate the number of bugs they killed during the 20 seconds. To assess this point, we investigated whether participants high in superiority felt it was more morally acceptable to kill small bugs. A t-test on the mean scores of the questionnaire asking participants just after the initial bug killing task to rate the degree to which they felt it was wrong to kill bugs was performed. Participants high in superiority did not rate killing of bugs as significantly morally acceptable ($M=6.45$, $SD=2.63$) than those low in superiority ($M=6.14$, $SD=2.39$), $t(65)=-.50$, *ns*.

Furthermore, we investigated whether high superiority people perceived themselves as less similar to small bugs than low superiority people by conducting a t-test on the mean score of the question asking participants to rate how similar/different

they think they are too small bugs. The t-test demonstrated that high superiority participants saw themselves less similar to small bugs ($M=1.61$, $SD=.95$) than low superiority participants ($M=2.45$, $SD=2.32$), $t(65)=2.03$, $p<.05$. To further examine whether this mediates the effect of superiority on self-paced killing, we looked at the correlation between the similarity item and self-paced killing. However, this analysis revealed no significant correlation between these variables, $r=-.04$, *ns*. Thus it does not appear that differences in perceived similarity with small bugs mediated the effect of superiority on self-paced killing. Participants high in superiority killed more bugs in 20 seconds than those low in superiority, no matter how similar/different they saw themselves to small bugs.

Needs for Dominance/Power/Control

Another potential mediator of our effects might be the need for dominance. We hypothesised that high superiority people should be eager for power, dominance, and control over others, and so feel that their dominance/power/control needs were unmet (higher the score were, the more their needs were met). In turn, this might lead them to kill more during the 20 seconds to assert their dominance/superiority. To test for this possibility, we conducted a t-test of superiority on the mean scores of the question

asking participants to indicate how strongly they felt their dominance/power/control needs were met just after the initial killing task. The t-test revealed that the degree to which participants felt their dominance needs were unmet did not differ between high (M=4.74, SD=1.54) and low superiority people (M=4.90, SD=1.40), $t(65) = .44$, *ns*.

We also thought that killing five bugs initially might induce more of an ego-threat and so lead to a greater need for dominance, and in turn, more self-paced killing. To test for this, we conducted a t-test of initial killing conditions on the mean scores of the dominance item. The t-test indicated that participants in the five bugs condition did not feel more strongly that their need for dominance was unmet (M=4.81, SD=1.31) than those in the one bug condition (M=4.80, SD=1.67), $t(65) = -.03$, *ns*.

Ancillary Analyses

Here, we examined five different items from the questionnaires we asked participants to complete by e-mail prior to the experimental session, namely attachment anxiety, attachment avoidance, parental coldness, parental overvaluation, and self-esteem, as potential moderators for escalation in aggression. 2-way ANOVA was employed to carry out these analyses, applying median splits in order to divide each of these variables into two levels, i.e. high and low.

Attachment Anxiety

In the analysis of the potential effects of attachment anxiety, the scores of the Experiences in Close Relationships Inventory were used. Ten out of 36 items were reverse coded, and the mean scores of 18 questions represented the attachment anxiety score for each participant. To divide participants into two groups, namely high and low attachment anxiety, a median split was employed. We conducted a 2(attachment anxiety high vs. low) \times 2(initial killing one vs. five bugs) ANOVA on the number of bugs killed by participants during the 20 seconds. Only the main effect of the initial killing condition on number of bugs participants killed during 20 seconds was obtained, $F(1,63)=9.68$, $p=.003$, while there was no significant interaction, $F(1,63)=.14$, *ns*. In other words, although more intense initial aggressive behaviour (killing five bugs initially, rather than only one bug killing) induced escalation in subsequent aggressive behaviour (killing more bugs subsequently), anxiety did not facilitate this effect.

Attachment Avoidance

Using a median split, participants were assigned to two different groups, namely high and low attachment avoidance, based on the total scores of 18 items from the Experiences in Close Relationships Inventory, which participants were asked to

complete by e-mail prior to the experimental session.

A 2(attachment avoidance high vs. low) \times 2(initial killing one vs. five bugs) ANOVA was performed on the number of bugs participants killed during the subsequent bug killing task. We found that there was only one main effect of the initial killing conditions, $F(1,63)=10.25$, $p=.002$, and no significant interactions, $F(1,63)=.367$, *ns*. Killing five bugs initially led participants to kill more subsequently than killing only one bug initially, regardless of how high or low avoidance participants were.

Parental coldness

The scores of parental coldness were calculated from the total scores of 11 items from the questionnaire in the quality of family relationships during childhood that we asked participants to complete by e-mail prior to the experiment. Four of 15 items were reverse coded. A median split was used to divide participants into two groups, namely high and low parental coldness. We carried out a 2 (perceived parental coldness high vs. low) \times 2(initial killing one vs five bugs) on the number of bugs participants killed in 20 seconds subsequently. The ANOVA revealed only one main effect of the initial bug killing conditions on the number of bugs participants killed during the self-paced extermination task, $F(1,63)=9.15$, $p=.004$, and no significant

interactions, $F(1,63)=.63$, *ns*. This means that the five bugs-killed condition led participants to kill more bugs during the 20 seconds than the one bug-killed condition, apart from how strongly or weakly participants perceived their parents as cold.

Parental overvaluation

The total scores of four questions from the questionnaire for the quality of family relationships during childhood represented parental overvaluation. A median split was employed to allocate participants to two groups, namely high and low parental overvaluation. We conducted a 2(perceived parental overvaluation high vs. low) \times 2(initial killing one vs. five bugs) on the number of bugs participants killed during the self-paced bug-killing task. This analysis showed only one main effect of the initial bug-killed conditions on the number of bugs participants killed in 20 seconds, $F(1, 36)=8.45$, $p=.005$, and no significant interactions between these two independent variables, $F(1,36)=.48$, *ns*. Therefore, the five-bugs killing condition led participants to kill more subsequently during the 20 seconds than the one-bug killed condition, no matter high or low parental overvaluation participants perceived.

Self-esteem

The self-esteem scores were calculated from the total scores of the Rosenberg Self-Esteem Scale that participants were asked to complete by e-mail prior to the laboratory experiment. Five of ten items were reverse coded. A median split was used to assign participants to two different groups, namely high and low self-esteem. Another 2(high vs. low self-esteem) \times 2 (initial 1 vs. 5 bug(s) killing) ANOVA was performed on the mean number of bugs killed by participants in 20 seconds. Only one significant main effect of the initial bug killing manipulation emerged, $F(1,63)=9.47$, $p=.003$, and there was no statistically significant interactions, $F(1,63)=.146$, *ns*.

Discussion

The current study tested the assumption that highly narcissistic people tend to escalate more in their initial aggression compared with less narcissistic people by employing a bug-extermination paradigm developed by Martens and his colleagues (in press). Specifically, participants were randomly assigned to the two different groups: depending on which group they were in, they were initially asked to kill either one or five bugs. Then we examined how many bugs participants exterminated during a 20-second extermination task. Prior to this experimental session, they completed the NPI to assess their levels of narcissism. It was hypothesized that, consistent with the prior work, participants in the initial five bugs-killed condition would kill more bugs during the subsequent self-paced killing task than ones in the initial one bug-killed condition. Furthermore, we predicted that those high in narcissism would show a greater effect of the initial bug-killing manipulation. We also predicted that, following that prior research that associates with narcissists to aggressive tendencies, in general highly narcissistic people would kill more bugs in 20 seconds than less narcissistic individuals.

Consistent with the prior research, our finding showed that people in the five bugs-killed condition killed more bugs than people in the one bug-killed condition. In

other words, the more severe the initial aggression engaged in, the greater the subsequent aggressive behaviour. However, there were no significant differences between those with high and low levels of narcissism. Also, this effect did not differ as a function of level of narcissism—both high and low narcissists killed more bugs in 20 seconds after the initial five bugs-killed than after killing only one bug initially.

Additionally, we did not find a main effect for narcissism. Interestingly, we did find a significant effect for the NPI sub-type of superiority on 20-second bug-killing behaviour, that is, high superiority participants killed more bugs in 20 seconds than low superiority participants. This is consistent with other work in which high superiority people have also aggressed more, particularly in response to ego-threatening, disapproval and negative evaluations from others (Kirkpatrick, Waugh, Valenica, & Webster, 2002; Webster & Kirkpatrick, 2006).

Although we found that there was the effect of the initial bug-killing on subsequent killing, possibly because participants were justifying their initial killing, we did not find clear effects of the initial bug-killing manipulation on our justification measures—the measures of ethicality and similarity. Participants in the initial five bugs-killed condition did not believe any more than those in the one bug-killed condition that killing small bugs was more morally acceptable. Also, those who killed

five bugs initially did not perceive themselves as less similar to small bugs. Similarly, the effects of superiority on the subsequent bug-killing behaviours were not mediated by the moral acceptability of killing bugs or perceived similarity to bugs.

Interpretation and Problems

Although we successfully replicated the result of the previous study conducted by Martens and his colleagues (in press), we did not find the additional effects we expected that would have more directly suggested the role of justification in the effect of initial killing on subsequent killing. Specifically, there was no evidence that participants justified their initial aggression (initial bug-killing) by reducing perceived similarity to bugs or ethicality of killing bugs. Moreover, high narcissists, those arguably more prone to justifying their actions, were not more likely to respond to increased initial killing with increased subsequent killing. Perhaps there are other reasons why participants in the five bugs-killing condition killed more bugs in 20 seconds than those in the one bug-killing condition.

One of the alternative explanations for this effect of initial killing could be desensitisation to aggressive behaviours. The process of desensitisation is defined as faded psychological responsiveness, sympathy, or empathy to targets of aggression after

repeated exposure to aggressive stimuli (Castano & Giner-Sorolla, 2006; Donnerstein & Smith, 1997). According to Bartholow, Bushman and Sestir (2006), for certain people, such as doctors and soldiers, desensitisation can be a useful psychological process, helping these people to adapt to their situations and perform their duties effectively. However, desensitisation also leads to reduced inhibition of aggressive behaviours (Eidelson & Eidelson, 2003). In this present study, since some participants dropped five bugs into the extermination machine one by one and some only dropped one bug into the machine, participants in the five bugs-killed condition might have become slightly more desensitised to killing bugs than those in the one bug-killed condition. In turn, more desensitisation might have made it easier to kill bugs during the subsequent bug-killing session. Thus, this may explain why those who killed five bugs initially killed more bugs in 20 seconds than those who killed only one bug initially.

Another possible explanation of this effect of initial bug-killing is that participants in this study might have felt a sense of obedience to the experimenter. Several studies have demonstrated the norm of obedience to authority among participants (e.g., Hamilton & Sanders, 1995; Meeus & Raaijmakers, 1986). The best known example is Milgram's set of studies of obedience (e.g., 1977). In his studies, participants taking the role of a "teacher" escalated the severity of electric shocks

delivered to a “learner”. It seems that situations where one person has authority lead people in subordinate positions to see their roles as requiring certain behaviours, and doing so, participants no longer see themselves as responsible for their own aggressive behaviours (Brief, Dietz, Cohen, Pugh & Vaslow, 2000). In this experiment, it is possible that participants who killed five bugs initially came to feel a stronger “commitment” to carrying out the requests of the experimenter—perhaps they felt more strongly involved in the experiment and so became more obedient to the experimenter than those who killed only one bug initially. It is also possible that, although the experimenter simply instructed them to kill bugs in 20 seconds at their own pace, participants felt as though the best way of following the experimenter’s instructions would mean killing more bugs during the 20 seconds. Thus, perhaps, because of an increased level of obedience to the experimenter, those in the five bugs-killed condition killed more bugs during the subsequent bug-killing task than those in the one bug-killed condition.

Narcissism as a predictor of aggression?

We also expected to find an effect of narcissism on 20-second bug-killing, but did not. It may have simply meant that narcissism has relatively little influence on

aggression and the escalation of aggression. This seems unlikely, however, because much previous research has demonstrated a strong positive correlation between aggression and narcissism (Baumeister, Smart & Boden, 1996; Papps & O'Carroll, 1998; Raskin et al., 1991; Rhodewalt & Morf, 1998; Stucke & Sporer, 2002). Consequently, another plausible explanation for the null results had to be sought in the present research. One of the major differences between this current study and previous research is the target of aggressive behaviours. The previous studies showed that narcissism predicted aggression against other people who had given negative evaluations or feedback to participants. For example, Bushman and Baumeister (1998) found that participants who received negative feedback about essays they wrote aggressed more towards the people whom they believed evaluated their essays. However, participants did not aggress towards innocent third parties who were not the evaluators. A similar finding was obtained from a study conducted by Kirkpatrick and his colleagues (2002). We thought that the bugs in our study might be sources of negative feedback of a sort—they were reminders of the participants' acts of killing with little justification, and so might suggest the participants were cruel or harsh people. On the other hand, participants did not receive any actual negative evaluations or feedback pertaining to their aggressive behaviours. More precisely, bugs did not offer

such evaluations to participants nor did the experimenter something narcissists seem especially sensitive to.

Another possible difference between this study and previous research is when and where we assessed narcissism among participants. Previous studies have administered the NPI and other narcissism scales, such as the Raskin and Novacek Narcissism Scale (RNNS: cited in Raskin, Novacek & Hogan, 1991) and the Selfism scale (Phares & Erskine, 1984), during their laboratory sessions. Therefore, participants have limited time and space to complete the scales and must do it alone. These circumstances may allow for the most natural responses and, therefore, fairly accurate and precise assessment of narcissism. In our study, however, the NPI questionnaire was distributed to participants by e-mail, and participants had no specific time limitation for completing the questionnaire. Such a situation may have led to socially desirable and less accurate responses. Thus, it is possible that we did not find a relationship between narcissism and the 20-second bug-killing behaviour because the NPI scale in this study did not measure narcissism precisely enough.

Further directions

Although we did not find strong evidence for the effects of narcissism or

interactions of narcissism with the initial bug-killing manipulation on the 20-second bug-killing behaviour, it may still be the case that these effects exist. To obtain supportive evidence for the effects of narcissism on escalation in bug-killing behaviours, improvement of the experimental procedures in this current study would be essential. As mentioned above, we could give participants the NPI in the laboratory room with a time limitation. Also, other narcissism scales, such as the Raskin and Novacek Narcissism Scale, could be added to the set of questionnaires. Furthermore, delivering more obvious negative evaluations and feedback to participants might facilitate ego-threats leading to escalation in their subsequent aggression. For example, instead of conducting the initial bug-killing task individually, each participant could pair up with a confederate acting as another participant. The experimenter could ask the real participant to perform the initial bug-killing. After this initial bug-killing task, the confederate could display disgust and make a negative comment about the participant's initial bug-killing, such as "Oh no, I can't believe that you just killed the bugs. I just couldn't do that", and leave the room. This disapproval of what the real participant has just done (the initial bug-killing) could threaten participants and evoke a need for justifying the initial aggression, which might lead participants to escalate their subsequent bug-killing. With this explicit disapproval, perhaps narcissists with their fragile self-esteem would be

affected more by the initial killing manipulation than those low in narcissism.

Implications

We had no evidence for the effects of the initial bug-killing manipulation on our justification measures. Therefore, it is possible that participants killed more bugs for other alternative reasons, such as desensitisation or obedience. Desensitisation and obedience can, however, also be construed as a defence mechanism used to protect against dissonance (Bathrow et al., 2006; Brief et al., 1995). Certainly, it may still be the case, then, that increased initial killing fuelled further killing in an effort to defend against and justify the initial killing. If this is correct, to deal with issues of aggression efficiently, we might pay more attention to ego-threats as resulting from aggression and fragile and unstable self-esteem which might exacerbate these ego-threats. One potentially effective intervention for reducing aggression and prevention of serious aggressive behaviours could therefore be to encourage people to express their vulnerability to ego-threats (Bond, Ruaro & Wingrove, 2006; Pyszczynski, Greenberg, Solomon & Stubing, 1993; Velasco & Bond, 1998). In clinical settings, psychological confrontation with upsetting events appears a useful technique to improve mental health (Esterling, L'Abate, Murray & Pennebaker, 1999). Pyszczynski et al (1993) suggest that

once people experience the unpleasant emotions stemming from ego-threats, defensive manoeuvres lose the function of protecting individuals from such a displeased feelings, therefore, the unpleasant emotions become more tolerable than they first anticipated—*“the fear of the unpleasant emotion is worse than the emotion itself”* (Pyszczynski et al., 1993, p 178). Based on this account, Bond and her colleagues (2006) demonstrated that encouraging participants to articulate their vulnerability to an ego-threat, rather than simply expressing anger, reduced their angry thoughts. This suggests that acknowledging their vulnerability to the ego-threats of having killed or aggressed may help people to control the subsequent aggression that may arise to justify the initial aggression.

Hopefully, by better identifying personality characteristics that facilitate the effect of initial aggression on subsequent aggression, we may have a better sense of how to combat this kind of escalation in aggression. In war, not all soldiers torture prisoners with increasing harshness. Similarly, only some school bullies escalate in their aggression and attack their targets with increasing brutality. Thus, further studies of personality and escalation in aggression might successfully help us understand these processes involved in escalation of aggression. Perhaps this also might have some significant implications for novel ways for intervening in real world aggression, such as

violence in intimate relationships, torture, or mass killing behaviour. More precisely, current social issues concerned with escalation in aggression might productively focus on the perspective of fragile high self-esteem, a major characteristic of narcissism, that may be an important factor fuelling escalation in aggression.

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Appendix A

The Narcissistic Personality Inventory Questionnaire

Please respond to each statement mentioned below by indicating either TRUE or FALSE according to your judgment about whether each statement explains you or not.

1. _____ I see myself as a good leader.
2. _____ I like to look at my body.
3. _____ Everybody likes to hear my stories.
4. _____ I expect a great deal from other people.
5. _____ I like to look at myself in the mirror.
6. _____ I will be a success.
7. _____ I want to amount to something in the eyes of the world.
8. _____ I would prefer to be a leader.
9. _____ I can make anybody believe anything.
10. _____ I insist upon getting the respect that is due me.
11. _____ I really like to be the centre of attention.
12. _____ I am an extraordinary person.
13. _____ I will never be satisfied until I get all that I deserve.
14. _____ I like having authority over other people.
15. _____ I like to display my body.
16. _____ I am a born leader.
17. _____ I like to take responsibility for making decision.
18. _____ I can read other people like a book.
19. _____ I have a strong will to power.
20. _____ If I ruled the world it would be a much better place.
21. _____ I am apt to show off if I get the chance.
22. _____ I think I am a special person.
23. _____ I get upset when people don't notice how I look when I go out in public.
24. _____ I have a natural talent for influencing people.
25. _____ I rarely depend on anyone else to get things done.

26. _____ I like to be complimented.
27. _____ I like to be the centre of attention.
28. _____ I always know what I am doing.
29. _____ I can usually talk my way out of anything.
30. _____ I find it easy to manipulate people.
31. _____ I am assertive.
32. _____ I am going to be a great person.
33. _____ I like to start new fads and fashions.
34. _____ I am more capable than other people.
35. _____ I would do almost anything on a dare.
36. _____ I know that I am good because everyone keeps telling me so.
37. _____ People always seem to recognize my authority.
38. _____ I wish somebody would someday write my biography.
39. _____ Modesty doesn't become me.
40. _____ I can live my life any way I want.

Appendix B

The Hierarchy of Needs Questionnaire

1	2	3	4	5	6	7
not at all met			neutral			completely met

Using the scale above:

1. Please indicate whether you feel that your physical needs, such as hunger and thirst, are met right now? Your answer: _____

2. Please indicate whether you feel that your safety/security needs, such as shelter and a stable lifestyle, are met right now? Your answer : _____

3. Please indicate whether you feel that your belongingness needs, such as affiliation

and acceptance, are met right now?

Your answer : _____

4. Please indicate how strongly you feel that your dominance needs, such as power and control, are met right now?

Your answer: _____

5. Please indicate whether you feel that your cognitive needs, such as knowledge and understanding, are met right now?

Your answer: _____

6. Please indicate whether you feel that your aesthetic needs, such as order and beauty, are met right now?

Your answer: _____

7. Please indicate whether you feel that your self-actualisation needs, such as realization of potential, are met right now?

Your answer: _____

Appendix C

The Perceived Similarity to Small Bugs Questionnaire

Please rate how similar/different you think each of the following animals is to you. Circle the number that best represents your answer using this scale:

	1	2	3	4	5	6	7	8	9	
	Extremely different							extremely similar		
Chimps	1	2	3	4	5	6	7	8	9	
Dogs	1	2	3	4	5	6	7	8	9	
Cats	1	2	3	4	5	6	7	8	9	
Cows	1	2	3	4	5	6	7	8	9	
Sneaks	1	2	3	4	5	6	7	8	9	
Chickens	1	2	3	4	5	6	7	8	9	
Goldfish	1	2	3	4	5	6	7	8	9	
Worms	1	2	3	4	5	6	7	8	9	
Small Bugs	1	2	3	4	5	6	7	8	9	

Appendix D

The Moral Acceptability of Killing Small Bugs Questionnaire

Please rate how morally wrong you feel it is to kill each of the following animals. Circle the number that best represents your answer using this

scale:

	1	2	3	4	5	6	7	8	9
	completely morally unacceptable					completely morally acceptable			
Humans	1	2	3	4	5	6	7	8	9
Chimps	1	2	3	4	5	6	7	8	9
Dogs	1	2	3	4	5	6	7	8	9
Cats	1	2	3	4	5	6	7	8	9
Cows	1	2	3	4	5	6	7	8	9
Sneaks	1	2	3	4	5	6	7	8	9
Chickens	1	2	3	4	5	6	7	8	9
Goldfish	1	2	3	4	5	6	7	8	9
Worms	1	2	3	4	5	6	7	8	9
Small Bugs	1	2	3	4	5	6	7	8	9