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Falling off the self-imposed pedestal:

How audience presence and feedback affect aggressive responding in narcissists

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Abstract

Aggression can be a source of conflict as well as a means of dealing with conflict in interpersonal, national, and international domains. The authors investigated how personal and environmental factors interact to influence expressions of aggression in an interpersonal context. This investigation was motivated by two lines of evidence. First, people are more likely to aggress and do so more severely when they are insulted in front of an audience, in order to re-establish and project positive self-appraisal. Second, persons with higher levels of narcissism react to threat more aggressively than those with lower levels of narcissism. The present experiment combined these two strands of research and tested the hypothesis that participants with higher levels of narcissism would be more aggressive than participants with lower levels of narcissism when they imagine receiving negative feedback in the presence of others. The result of a three-way interaction supported this hypothesis. The implications of this finding for the Canadian Forces in terms of mitigating aggression and profiling leaders of adversarial groups are discussed.

Résumé

L'agressivité peut être la source de conflits comme elle peut être le moyen employé pour les régler, que ce soit dans les rapports entre personnes ou à plus grande échelle, dans le cadre de relations nationales et internationales. Les auteurs ont étudié l'incidence que pouvait avoir l'interaction de facteurs personnels et contextuels sur l'expression de l'agressivité dans les rapports interpersonnels. La recherche a été motivée par deux constatations. La première : une personne est plus susceptible de recourir à l'agressivité et ce, de façon marquée, si elle se fait blâmer publiquement; elle cherche par ce moyen à rétablir son image et à projeter qu'elle s'apprécie. La deuxième, une personne au fort tempérament narcissique réagit à la menace avec plus d'agressivité qu'une autre au faible tempérament de même nature. La présente expérience a combiné ces deux constatations et évalué une hypothèse : les participants ayant un fort tempérament narcissique seraient plus agressifs que ceux au faible tempérament de même nature lorsqu'ils imaginent se faire blâmer publiquement. Le résultat de l'interaction des trois éléments a confirmé cette hypothèse. Les répercussions de la recherche font l'objet de discussions; les Forces armées pourraient trouver dans ce résultat une façon de réduire l'agressivité et de déterminer avec plus d'exactitude le profil des dirigeants de groupes adverses.

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Executive summary

Falling off the self-imposed pedestal: How audience presence and feedback affect aggressive responding in narcissists

Chelsea Ferriday; Oshin Vartanian; David R. Mandel; DRDC Toronto TR 2009-215; Defence R&D Canada – Toronto; November 2009.

Introduction or background: This technical report presents the results of an experiment that explored how psychological dispositions and environmental conditions interact to influence the intensity of human aggression. Given that aggression can be a source of conflict as well as a means of dealing with conflict, a better understanding of the personal and situational determinants of aggression might enable the Canadian Forces to respond to aggression more effectively and thereby increase the probability of mission success.

Past psychological research has shown that when persons receive self-relevant negative feedback in the presence of others, they are more likely to aggress, and aggress more severely, than when feedback is administered in private. This finding has been explained in terms of the threat negative feedback poses to one's self-esteem, especially when the self is threatened publicly. According to impression management theory by retaliating aggressively or denigrating another, one's sense of self may be re-established.

Further research has found that while some individuals have self-esteem that is stable and resilient to negative feedback, others are more sensitive to even the slightest criticism. For these individuals, their high self-esteem is over-inflated and easily invalidated, and they often experience heightened feelings of insecurity and personal inadequacy when presented with self-discrepant information. Stability of self-esteem is often measured by assessing participants on narcissism because high narcissism is markedly similar to high unstable self-esteem.

To the best of the authors' knowledge, no prior research has examined how persons varying in stability of self-esteem react in response to negative feedback received in public and private settings. The present experiment examined how narcissism and audience presence interact to affect aggressive behaviour in response to self-relevant negative feedback. It was hypothesized that aggression would peak when participants who scored high on a measure of narcissism received negative feedback in a public setting.

Results: The results supported our hypothesis: The three-way interaction involving narcissism, audience presence, and feedback was statistically significant. As predicted, aggressive responses were highest among participants with high levels of narcissism who imagined receiving negative feedback in the presence of others.

Significance: The present findings have two implications. First, they suggest that the expression of aggression can be mitigated by providing negative feedback in ways that minimize public humiliation or shame. This appears to be particularly relevant if the target of such feedback is narcissistic. Second, leaders who display characteristics of narcissism, such as grandiosity and superiority, may be more likely to use aggression to resolve conflicts and/or to achieve their objectives. Profile analyses of such leaders or instigators might take advantage of the potential indicative value of narcissism in forecasting aggression.

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Falling off the self-imposed pedestal: How audience presence and feedback affect aggressive responding in narcissists

Chelsea Ferriday; Oshin Vartanian; David R. Mandel; DRDC Toronto TR 2009-215; R & D pour la défense Canada – Toronto; Novembre 2009.

Introduction ou contexte: Le présent rapport d'expertise fait état des résultats d'une expérience au cours de laquelle on a évalué l'incidence de l'interaction de dispositions psychologiques et de facteurs contextuels sur le niveau d'agressivité d'une personne. Comme l'agressivité peut être à la fois la source d'un conflit et un moyen utilisé en réaction à un conflit, si les Forces armées parviennent à mieux comprendre les facteurs psychologiques et contextuels reliés à l'agressivité, elles pourront éventuellement intervenir plus efficacement et faire en sorte d'accroître le taux de réussite de leurs missions.

Des recherches antérieures en psychologie ont démontré qu'une personne qui se fait blâmer publiquement a tendance à réagir par un comportement agressif davantage que si le blâme est fait en privé. Ce constat s'explique ainsi : en se faisant blâmée, la personne est menacée dans son estime, d'autant plus lorsque la menace est publique. Selon la théorie de la gestion des impressions, une personne peut recouvrer son estime en ripostant par l'agressivité ou en dénigrant une autre personne.

Des recherches ont découvert que certaines personnes ont une estime d'elles-mêmes stable et qu'elles ne se laissent pas abattre par des commentaires négatifs. À l'inverse, d'autres sont plus sensibles et réagissent à la moindre critique. Ces personnes ont une estime surdimensionnée d'elles-mêmes qui peut être facilement démolie. Elles sont souvent habitées de sentiments marqués d'insécurité et elles n'arrivent pas à s'adapter à des commentaires qui divergent de l'opinion qu'elles se font d'elles-mêmes. La tendance au narcissisme sert souvent à évaluer la stabilité de l'estime de soi, les caractéristiques d'une personne narcissique s'apparentant de façon très nette à celles d'une personne à l'estime très instable.

À la connaissance des auteurs, aucune étude n'a été réalisée sur la façon dont des personnes à l'estime de soi instable réagissent lorsqu'elles reçoivent des commentaires négatifs publiquement et en privé. La présente expérience a examiné la façon dont le narcissisme et la présence d'un public interagissent en réponse à un blâme et l'influence que ces éléments ont sur le comportement agressif. Les chercheurs ont émis l'hypothèse suivante : les participants ayant un fort tempérament narcissique seraient ceux qui atteignent des sommets d'agressivité lorsqu'ils se font blâmer publiquement

Résultats: Les résultats ont confirmé l'hypothèse. L'interaction des trois éléments (narcissisme, présence d'un public et blâme) a été statistiquement significative. Comme

prévu, les réactions agressives ont été marquées chez les participants au fort tempérament narcissique qui avaient imaginé se faire blâmer publiquement.

Importance: Les résultats signifient deux choses. La première, que l'on peut atténuer l'agressivité en réduisant l'humiliation ou la honte générées par la présence du public. Cela semble être particulièrement opportun si la cible du blâme a un tempérament narcissique. La deuxième, que les dirigeants qui démontrent des caractéristiques du tempérament narcissique, comme le sentiment de grandeur et de supériorité, sont plus susceptibles que les autres de recourir à l'agressivité pour résoudre des conflits et/ou atteindre leurs objectifs. Il serait avantageux d'inclure dans les analyses de profil de ces dirigeants ou de ces instigateurs une évaluation de leur caractère narcissique à titre indicatif, pour prévoir les formes d'agressivité possibles.

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1 Introduction

Aggression can be a source of conflict as well as a means of dealing with conflict. Thus, a better understanding of the personal and situational determinants of aggression might enable the Canadian Forces to respond to aggression more effectively and thereby increase the probability of mission success. This technical report presents the results of an experiment that explored how psychological dispositions and environmental conditions interact to influence the intensity of human aggression. Specifically, we were interested in whether or not individuals would be more aggressive when they imagined receiving self-relevant negative information in front of others, and whether or not the effect would be stronger among individuals with relatively high levels of narcissism. The subsections that follow outline the variables of theoretical interest and our key hypothesis.

1.1 Audience Presence

Impression management theory posits that a key motivation behind human behaviour is to develop a favourable impression of oneself in others (for a review, see Leary & Kowalski, 1990; Schlenker & Weigold, 1992). Felson (1978) argued that when favourable impressions of oneself are threatened by others, humans are likely to respond with aggression for at least two reasons. First, when individuals perceive what they regard as unfair self-relevant negative feedback, they are likely to view the source as less deserving of normal courtesies. Second, self-relevant negative feedback, which may be perceived by the receiver as an insult, is likely to threaten self-esteem. One response to such threat is a feeling of anger and a desire to retaliate against the source of threat. Retaliation can result in a reassertion of positive attributes. Furthermore, a successful counterattack may resurrect honour and effectively void the insult.

There are, of course, other ways of responding to insult (Felson, 1978). If the recipients perceived the negative feedback to be legitimate or justified, they could accept the criticism. Or if the material costs of counterattack were too high, the recipients might redirect their responses in less risky ways (e.g., by fantasizing about a successful counterattack, targeting a less threatening other, etc.).

Impression management theory thus posits that aggression is most likely to occur when a person's identity is threatened and when an audience is present (Felson, 1978, 1982). Indeed, Felson (1982) found that individuals are more likely to respond with verbal aggression when they are the recipients of insult, and that such aggression is especially pronounced when the insult is delivered in the presence of an audience. Moreover, Felson (1978) observed that most aggressors perceive their actions to be justified and retaliatory under such circumstances.

Notwithstanding the importance of situational determinants of aggression, it seems likely that individual differences in dispositional tendencies will also influence how people

choose to respond to self-relevant feedback. Next, we review pertinent literature on dispositional variables relevant to aggression.

1.2   Individual Differences

A growing body of research has examined the effect of self-esteem on aggression. A groundbreaking study by Kernis, Grannemann, and Barclay (1989) found that aggression results when one party perceives another to have threatened its self-esteem by providing unwarranted negative feedback, such as insult or criticism (see also Baumeister, Bushman, & Campbell, 2000; Baumeister, Smart, & Boden, 1996; Bushman & Baumeister, 1998; Konrath, Bushman, & Campbell, 2006). People may respond to such negative feedback by reacting defensively, in efforts to defend their self-esteem and to promote a strong and positive self-image (Felson, 1984; Feshbach, 1970).

When facing self-esteem threat, however, some individuals are more likely than others to use aggression. This appears to be a result of the stability of their self-esteem—or, as Kernis et al. (1989) put it, "the magnitude of short-term fluctuations in one's global self-evaluation" (p. 1013). The extent to which self-esteem fluctuates varies greatly among individuals (Kernis, Cornell, Sun, Berry, & Harlow, 1993; Baumeister et al., 1996). Persons whose level of self-esteem is relatively consistent are considered to possess stable and secure self-esteem, whereas others who are prone to fluctuations in their self-relevant appraisals are considered to possess insecure and unstable self-esteem. Self-appraisals of persons with unstable self-esteem will vary greatly depending on environmental factors. For example, poor performance and negative feedback would be more likely to result in negative self-relevant appraisals.

In general, people are averse to negative self-appraisals and will seek to avoid their occurrence (Baumeister et al., 1996). This is especially true for those with high unstable self-esteem who are prone to experiencing negative self-relevant appraisals on a recurrent basis. To ward off negative self-evaluation, individuals with high unstable self-esteem will seek out opportunities in their day-to-day lives to prove their strengths and abilities to both themselves and others, bolstering their positive self-regard. In previous studies, individuals with high unstable self-esteem were shown to be more reliant on everyday events for feelings of self-worth (Baumeister et al., 1996; Jordan, Spencer, & Zanna, 2005; Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003). They were also more inclined to interpret interpersonal interactions with hostile intent and more likely to respond to threats with anger and hostility (Baumeister et al., 1996; Bushman & Baumeister, 1998; Kernis et al., 1989; Kernis, Lakey, & Heppner, 2008). In their search for corroboration, persons with high unstable self-esteem will inevitably face negative feedback as it will be nearly impossible for others to validate their inflated favourable self-views—at least to the extent that they feel deserving of it. Rather than accept the negative feedback, persons with high unstable self-esteem choose to react defensively to prove their strengths and to uphold their positive self-relevant evaluations.

In contrast, persons with high stable self-esteem appear to be relatively unaffected by self-esteem threat and experience less desire to bolster their self-evaluations (Baumeister et al., 1996; Bushman & Baumeister, 1998; Kernis et al., 1989, 2008). Even when exposed to negative feedback, those with high stable self-esteem experience little fluctuations in their positive self-relevant appraisals. This is because consistent confirmation of favourable appraisals by others has provided strong support for their high self-esteem. When they do receive negative feedback, they are less likely to develop negative self-appraisals. Since they are not affected by the negative feedback, they experience little to no desire to react defensively. Instead they often choose to accept the negative feedback as constructive criticism, or ignore it altogether.

More recently, theorists (e.g., Bosson, Brown, Zeigler-Hill, et al., 2003; Brown & Bosson, 2001; Jordan et al., 2003, 2005; Kernis, 2003; Zeigler-Hill, 2006) have proposed that self-esteem can be categorized into two distinct qualities: elevation (i.e., whether it is high or low) and consistency (i.e., whether it is discrepant or congruent). Consistency of self-esteem refers to the congruence between a person's explicit and implicit self-views. A person's explicit self-view is the self-image or persona they present to others, whereas an implicit self-view is experienced pre-consciously. That is, Jordan et al. (2003) posited that a person's implicit self-view usually resides outside of their awareness, but may enter their awareness when they are under pressure (e.g., difficult task demands or time pressure). When cognitively strained, a person may experience difficulty accessing their explicit self-view and automatically access their implicit self-view to guide their conscious actions.

Supporting this account, Koole, Dijksterhuis, and van Knippenberg (2001) found that when a person's cognitive faculty has been loaded by time constraints or "busyness," their explicit self-relevant evaluations more closely match their implicit self-relevant evaluations than persons who are relatively less cognitively burdened. Cognitive load may be experienced in a range of different situations, including when a person's self-esteem has been threatened. This may be especially true in persons with high unstable self-esteem who are more invested in establishing a positive self-view to themselves and others (Baumeister et al., 1996), and are more sensitive to threats in general. Persons with high stable self-esteem are relatively unaffected by threat and as such their cognitive load is also less likely to be burdened.

A person's explicit self-esteem and implicit self-esteem are not always congruent (Jordan et al., 2003, 2005). For example, some individuals maintain high explicit self-esteem and low implicit self-esteem, and some hold low explicit self-esteem and high implicit self-esteem. A discrepancy between explicit and implicit self-esteems may cause instability in self-relevant evaluations. Specifically persons with high explicit and high implicit self-esteem present a positive self-regard consistent with the self-evaluation they maintain pre-consciously. That is, their positive self-regard is supported by how they truly feel

about themselves deep down. Other persons with high explicit self-esteem but low implicit self-esteem do not have the support from their internal self-relevant appraisals. Analogous to a building, if a construct is not supported by strong internal structure, it is very susceptible to even the slightest environmental threats and can easily become unstable. Persons with high explicit but low implicit self-esteem are especially vulnerable to threats to their self-esteem and are prone to reacting defensively in efforts to assert a positive self-regard (Jordan et al., 2003, 2005).

Theorists have relied on a range of different methods to measure the extent to which persons possess high unstable self-esteem (e.g., Bushman & Baumeister, 1998; Jordan et al., 2003). One popular and easily administrable method is to measure a person's level of narcissism (e.g., Bushman & Baumeister, 1998; Konrath et al., 2006; Twenge & Campbell, 2003). The *Oxford English Dictionary* defines narcissism as, "Excessive self-love or vanity; self-admiration, self-centredness" (see citation in **References**). These qualities closely resemble the exaggerated and invalidated personal evaluations held by those with high unstable self-esteem.

Similarly, Kohut (1971) and Kernberg (1975) have proposed that while narcissists present a highly positive self-view to others, subconsciously they experience insecurities and self-doubts towards their favourable self-appraisal. Several studies have provided support for this claim, establishing a positive correlation between instability of high self-relevant evaluations and narcissism (e.g., Jordan et al., 2003; Kernis et al., 2008; Rhodewalt, Madrian, & Cheney, 1998; Zeigler-Hill, 2006). In their youth, persons with high levels of narcissism may have developed an immature attachment style that causes them to maintain a negative self-view and simultaneously be strongly invested in their own superiority. This discrepancy between a negative self-view and need for dominance results in defensive behaviours designed to validate their own favourable self-view.

One possible mechanism for establishing one's superiority and reinstating threatened self-esteem is through acts of aggression. Several studies have found heightened levels of anger and hostility amongst narcissists (e.g., Emmons, 1987; Papps & O'Carroll, 1998; Raskin, Novacek, & Hogan, 1991; Rhodewalt & Morf, 1995; Wink, 1991). In addition, narcissists have been found to be more aggressive than non-narcissists following threats to their self-esteem (e.g., Baumeister, 2001; Baumeister et al., 1996; Bushman & Baumeister, 1998; Campbell, Bonacci, Shelton, Exline, & Bushman, 2004; Konrath et al., 2006; Martinez, Zeichner, Reidy, & Miller, 2008; Stucke & Sporer, 2002) and social rejection (Twenge & Campbell, 2003). Thus, high narcissism increases the likelihood of aggression in the face of threat to self-esteem.

1.3　Hypothesis

We hypothesized that narcissism and audience presence would moderate the effect of feedback on aggression. Specifically, we predicted a three-way interaction between narcissism, audience presence, and feedback such that participants who scored high on narcissism and imagined receiving negative feedback in the presence of an audience would display the highest mean level of aggression.

2 Methodology

2.1 Participant demographics

This protocol was approved by DRDC Human Research Ethics Committee (HREC). One hundred sixty-four (102 female and 62 male) participants were recruited from the general public in Southern Ontario to participate in this experiment. They received stress remuneration for their participation in accordance with DRDC HREC guidelines. The mean age of the sample was 41.66 years ($SD = 14.52$ years).

2.2 Design and Procedure

Participants were randomly assigned to experimental conditions in a 3 (Feedback: positive, neutral, negative) × 2 (Audience presence: public, private) × 2 (Scenario: abortion, municipal spending) factorial between-subjects design. Scenario was implemented as a third variable in this experiment in order to provide a more robust test of our hypotheses. However, we did not expect an effect of scenario on aggression either on its own or in interaction with other variables.

Participants completed this experiment as part of a questionnaire package containing several different experiments. Participants were told that they would be participating in a series of studies designed to assess various aspects of their beliefs and attitudes.

In each condition, participants were first asked to imagine themselves in a psychology experiment on "human performance and its evaluation" where they received feedback on an essay they had written. Specifically, participants read the following:

> Imagine that you are a participant in a psychology experiment on "Human Performance and its Evaluation" that was advertised in the local paper.
>
> On the day of the experiment, you go to the experimenter's lab, where you are greeted by the experimenter. You notice another person sitting at the table. The experimenter informs you that the other person's name is Alex, and like you he will be another participant in the experiment. You are instructed that the experiment will be comprised of two separate parts. For the first task, either you or Alex will be placed in the role of a student and the other participant will take the role of a teacher. The student will complete a short essay which will be evaluated by the teacher. In the second task, these roles will be reversed.
>
> The experimenter asks you to draw a piece of paper from a hat to determine who will be the student and the teacher in each task. You reach in and draw a piece of paper that indicates that you will be the student in the first task and the teacher in second task.

At that point, participants continued reading one of the twelve versions of the vignette corresponding to the experimental condition to which they were randomly assigned.

Scenario was manipulated such that in one condition participants were asked to imagine that the essay topic was on abortion, whereas in the other condition the essay topic was on local municipal spending. Feedback was manipulated by having the peer-participant in the scenario assign positive, neutral, or negative feedback on the essay to the participant. Finally, audience presence was manipulated by having participants imagine that the feedback was delivered either publicly by having it read aloud in front of another person or privately by having it written and delivered to the participant alone.

All participants then read an excerpt which provided them with the context and instructions for the "second task". The excerpt asked participants to envision themselves completing a competitive reaction time task (Berkowitz, Corwin, & Heironimus,1962; Buss, 1961):

> The experimenter then thanks both of you for completing the first task and reminds you that in the second task you will be evaluating Alex. You and Alex are led into two separate soundproof chambers. Alex will be asked to complete a computer task where he will have to press a button as fast as possible when an "X" appears on his computer screen.
>
> If Alex responds too slowly, he will lose on that trial. When Alex loses on a trial, you will need to inform him of his failure by administering a blast of noise as a form of punishment for failing to respond fast enough. At the start of the testing phase, you will be asked to determine both the loudness of the noise on a scale from 1 (lowest level) to 10 (highest level) as well as its duration (either a brief 1 second blast of noise or a longer 10 second blast). The experiment is set up so that even if you choose the loudest level and long duration it would not cause the student any permanent damage. However, other participants have indicated to the experimenter that loudness levels of 5 or greater are increasingly annoying to hear, especially when they are set to the long duration.

After reading the brief vignette, participants were asked to select the level of noise loudness and duration they would select for those trials in which Alex responded too slowly. This served as our measure of aggression. The loudness measure was an integer value between 1 and 10. For the duration measure, participants selected either a 1 or 10 second duration

Participants then completed a series of unrelated tasks before they were asked to fill out the Narcissism Personality Inventory (Raskin & Terry, 1988). The Narcissism Personality Inventory is a 45-item questionnaire for which participants indicate their level of agreement to statements such as "I like to have authority over people" or "I always know

what I am doing" using a 4-point forced choice scale from 1 (strongly agree) to 4 (strongly disagree). The Narcissism Personality Inventory is commonly used to assess narcissism in non-clinical samples.

3 Results

Our dependent variable (aggression) was a composite measure of noise duration and noise loudness. It was created by dummy coding duration as 0 for the short duration and 1 for the long duration, and adding this value to the loudness rating (which ranged from 1 to 10). Thus, possible aggression scores ranged from 1 (least aggressive) to 11 (most aggressive). The mean aggression score was 4.31 ($SD = 2.52$).

We conducted a median split on the participants' scores on the Narcissism Personality Inventory to generate two groups (high, low). Averaging across scenarios, we conducted a 2 (audience presence) × 3 (feedback) × 2 (narcissism) between-subjects analysis of variance (ANOVA), with aggression as the dependent variable. None of the main effects or two-way interaction effects was significant. However, as predicted, there was a significant three-way interaction involving feedback, audience presence, and narcissism, $F(2, 150) = 3.53$, $MSE = 5.95$, $p < .05$, $\eta^2_p = .05$. As Figure 1 shows, level of aggression was highest in participants who scored high on the Narcissism Personality Inventory and imagined receiving negative feedback in the presence of others. A test of the simple effect of audience presence demonstrated that among participants who scored high on the Narcissism Personality Inventory and received negative feedback, aggression was significantly higher when the feedback was delivered in public ($M = 6.85$, $SD = 2.73$) than in private ($M = 4.27$, $SD = 2.15$), $t(22) = 2.53$, $p < .05$. Tests of the simple effect of audience presence were not statistically significant in any of the other five conditions.
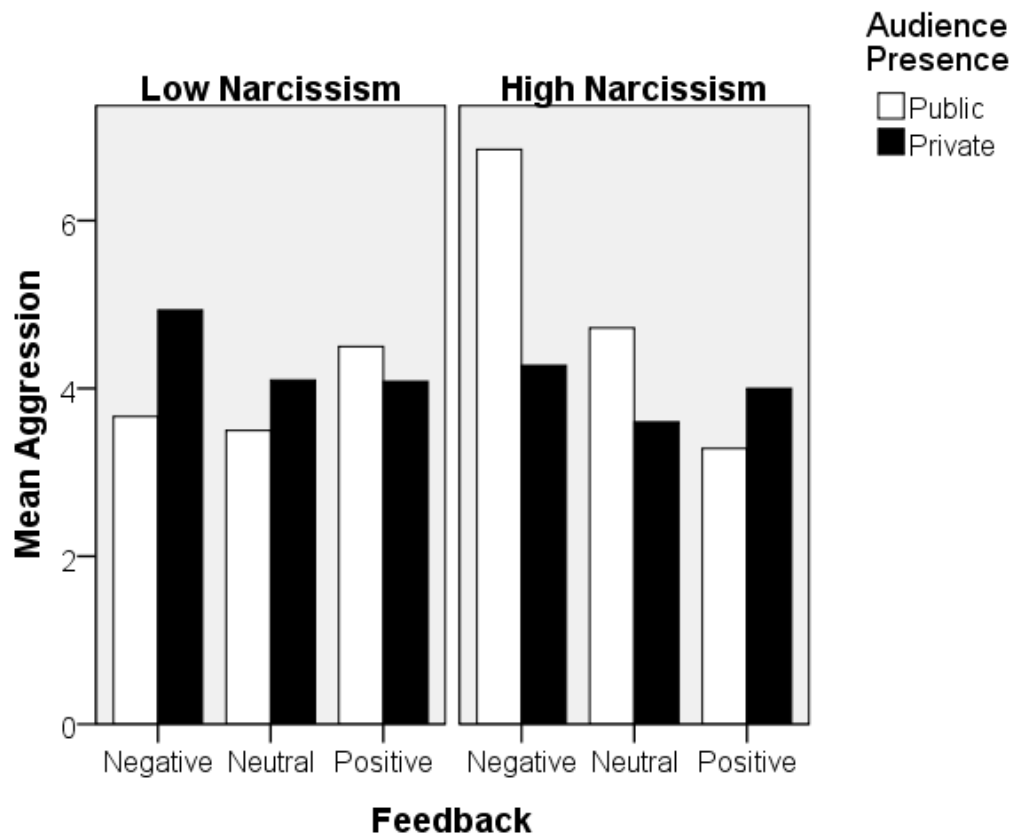
Figure 1: Mean aggression as a function of feedback, audience presence, and narcissism.

4   Discussion

The findings of this experiment supported the hypothesis that narcissism, audience presence, and feedback interact to affect aggression. Participants were most aggressive when they scored high in narcissism and imagined receiving negative feedback in the presence of others.

The present study extends the earlier work of scholars (e.g., Felson, 1978, 1982) who suggested that humans are more aggressive in response to negative feedback when it is delivered in front of others. We found this effect to be particularly strong in narcissists. These findings also compliment the work of researchers (e.g., Baumeister et al., 1996; Bushman & Baumeister, 1998; Konrath et al., 2006) who found narcissists to be more aggressive in response to negative feedback than non-narcissists. This experiment specifies the conditions (negative feedback, audience presence) under which narcissists are more aggressive than non-narcissists. To our knowledge, these moderating effects have not been explored in conjunction in previous studies.

These results have two implications. First, they suggest that the expression of aggression can be mitigated by providing negative feedback in ways that minimize public humiliation or shame. This appears to be particularly relevant if the target of such feedback is narcissistic. Second, the results have implications for profiling leaders of adversarial groups or instigators of collective violence. When predicting the intent of political leaders, experts often attempt to understand how a leader's personality traits are likely to interact with political or social conditions to influence policymaking (Suedfeld, Cross, & Stewart, 2009). In previous work, scholars have shown interest in understanding how psychological variables such as the need for dominance (Pratto, Sidanius, Stallworth, & Malle, 1994), distrust in others (Hermann, 2006), and need for affiliation (Hermann, 1980) influence group leader's actions. Moreover, recent studies have found that political leaders responsible for extreme cases of violence exhibited symptoms of narcissism and high unstable self-esteem. For example, Mandel (2002, in press) examined biographies of Hitler and found that the Nazi leader experienced extreme difficulty in accepting negative self-relevant feedback from others. Rather than accept it, Hitler exhibited a tendency not only to react emotionally to criticism, and to blame others for his failures, but to do so with outbursts of rage. The results of the current study suggest that political leaders and charismatic ideologues who exhibit signs of narcissism and react to criticism with high levels of defensiveness may possess unstable evaluations towards themselves and their groups, leaving them vulnerable and sensitive to threats from other parties. As such, they may need to reassert their strengths and perceived superiority by demonstrating the inferiorities and weaknesses of others, often those who were perceived to have initiated the threat. In doing so, the leader may be prone to using methods of collective violence, including terrorism and genocide.

4.1   Limitations of the Present Research

This study had certain methodological limitations that should be considered when evaluating its findings. First, the researchers used Taylor's (1967) competitive reaction time task as the sole measure of aggression. Although the construct validity of this procedure has been established in previous studies (see Bernstein et al., 1987; Giancola & Zeichner, 1995), it has shortcomings. For example, Tedeschi and Quigley (1996) have argued that this method is limited because it allows participants only one method of responding to negative feedback. In the real world, there may be multiple options for persons to respond to those who insult them, such as asking the target for an explanation of reasons for the attack, or fleeing the situation and avoiding further confrontation. They also proposed that participants may fully believe the cover story presented by the experimenter. Rather than wishing to harm their partner, they may select a higher noise volume and duration to teach and evaluate the other participant's performance more effectively. Supporting this criticism, Baron and Eggleston (1972) found that intensity of shocks was correlated with self-reports of altruism. Rule and Nesdale (1974) also found that the most intense shocks were administered to confederates when participants were led to believe the shocks would improve performance, rather than when they were given negative feedback.

Second, Taylor's (1967) competitive reaction time task only allows for indirect forms of aggression. When this method is used in the laboratory, the participant is often in a different room than the confederate and unable to witness the effects of his or her aggression. Surely, in the real world, aggression may be performed at a much more proximal distance, often involving direct physical contact between the aggressor and the target. For these reasons, it could be argued that the researchers did not in fact measure true aggression, and may have only succeeded in assessing its adulterated and distant relative.

Third, the nature of the insult was hypothetical. Specifically, participants were asked to *imagine* both receiving negative feedback as well as delivering the noxious stimuli to a fellow participant. Participants might not select the same level of noise volume and duration for laboratory studies as they would for hypothetical vignettes. It would also be unlikely that the extent to which participants "aggress" after reading a brief vignette would correspond to the level of aggression they would exhibit after being insulted in the real world. However, it is unclear whether these differences would represent an attenuation or augmentation of the interactive effect observed in the present research. There are fundamental differences between selecting the noise volume and duration that a fellow participant would be exposed to and aggressing against another person for being insulted in front of one's peers. Thus, the present findings are merely suggestive of how environmental and dispositional factors might interact to influence expressions of aggression in real-life contexts.

4.2   Directions for Future Research

As the preceding discussion suggests, future studies may benefit from using a different measure of aggression. For example, recent studies have begun to use the "hot sauce paradigm" in which participants are asked to allocate a sample of hot sauce to a confederate who is known to strongly dislike spicy food (e.g., Bushman, Bonacci, Pedersen, Vasquez, & Miller, 2005; Lieberman, Solomon, Greenberg, & McGregor, 1999). Participants are also told that the confederate must consume the entire sample. This procedure addresses two of the limitations of Taylor's (1967) competitive reaction time task. First, ensuring participants are aware of the confederate's strong dislike of spicy food significantly reduces attributional ambiguity. That is, it should be clear to all participants that hot sauce allocations are in fact highly aversive to the recipient. Second, there is some evidence that the administration of hot sauce has been used as a method of aggression toward one's adversary in real-world interpersonal interactions (Lieberman et al., 1999). For example, a cook at a New Hampshire Denny's restaurant was arrested for assault after spiking the food of two state troopers with hot sauce. A witness to the attack alleged that the cook disliked police officers, and that the harm was intentional.

It may be beneficial if future research were to explore how narcissism, audience presence, and negative feedback interact to influence aggressive responding in real life settings. For example, researchers may wish to interview prison inmates convicted of violent crimes. The participants would be probed about the nature and circumstances of their crimes and the interviews would later be analyzed to determine whether the aggression had occurred as a function of negative feedback delivered publicly. Control conditions, from both the general population and inmate population, would be asked to recall a situation in which they had received negative feedback publicly. All participants would also be asked to complete measures of narcissism, enabling researchers to test the same three-way interaction that was tested in this study.

Future studies may also benefit from using different measures of self-esteem. Recent studies have found that persons with high explicit self-esteem and high implicit self-esteem consistently evaluate themselves positively and are the least likely to respond defensively to provocation (e.g., Jordan et al., 2003; Zeigler-Hill, 2006). On the other hand, when responding to negative feedback, persons with high explicit and low implicit self-esteem display the highest levels of narcissism, are more defensive, and more likely to discriminate ethnically than participants with consistently high or low explicit and implicit forms of self-esteem (e.g., Jordan et al., 2003, 2005). In other words, using measures that differentiate between implicit and explicit self-esteem may shed light on the subtleties of the narcissism dimension explored in this study.

Future research is necessary to extend this work from individuals to collective groups, defined by religion, sect, race, nationality, political group, tribe, or any sort of social network (Luhtanen & Crocker, 1992). In that context, researchers could explore whether (a) members of a group can possess *collective* self-esteem, (b) whether collective self-

network (Luhtanen & Crocker, 1992). In that context, researchers could explore whether (a) members of a group can possess *collective* self-esteem, (b) whether collective self-esteem can be stable or unstable, and (c) whether groups with unstable collective self-esteem are more likely to respond with aggression when threatened (e.g., politically, psychologically, physically, etc.) in front of other groups. We would predict that collective self-esteem and audience presence might moderate responses to negative feedback, such as perceived insults. To our knowledge, no study thus far has explored the moderating effects of collective self-esteem and audience presence on collective or individual expressions of aggression.

5   Conclusion

The present study explored the effects of narcissism, audience presence, and feedback on aggression. The results support the general assertion that expressions of aggression are a function of the interactive effect of environmental and dispositional factors. More specifically, the present findings provided support for the hypothesis that aggressive responses are more pronounced among individuals that score relative higher on measures of narcissism when those individuals receive negative feedback in a more public forum.

Of course, the present findings do not imply that all narcissists who receive negative feedback in a public forum will respond aggressively, and nor do they imply that when aggression has occurred that it is the result of the factors investigated here. Our hope, however, is that by gaining a better understanding of the variables that influence aggression, the Canadian Forces may be placed in a better position to influence it in ways that support Canada's strategic objectives.

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Aggression can be a source of conflict as well as a means of dealing with conflict in interpersonal, national, and international domains. The authors investigated how personal and environmental factors interact to influence expressions of aggression in an interpersonal context. This investigation was motivated by two lines of evidence. First, people are more likely to aggress and do so more severely when they are insulted in front of an audience, in order to re-establish and project positive self-appraisal. Second, persons with higher levels of narcissism react to threat more aggressively than those with lower levels of narcissism. The present experiment combined these two strands of research and tested the hypothesis that participants with higher levels of narcissism would be more aggressive than participants with lower levels of narcissism when they imagine receiving negative feedback in the presence of others. The result of a three-way interaction supported this hypothesis. The implications of this finding for the Canadian Forces in terms of mitigating aggression and profiling leaders of adversarial groups are discussed.

L'agressivité peut être la source de conflits comme elle peut être le moyen employé pour les régler, que ce soit dans les rapports entre personnes ou à plus grande échelle, dans le cadre de relations nationales et internationales. Les auteurs ont étudié l'incidence que pouvait avoir l'interaction de facteurs personnels et contextuels sur l'expression de l'agressivité dans les rapports interpersonnels. La recherche a été motivée par deux constatations. La première : une personne est plus susceptible de recourir à l'agressivité et ce, de façon marquée, si elle se fait blâmer publiquement; elle cherche par ce moyen à rétablir son image et à projeter qu'elle s'apprécie. La deuxième, une personne au fort tempérament narcissique réagit à la menace avec plus d'agressivité qu'une autre au faible tempérament de même nature. La présente expérience a combiné ces deux constatations et évalué une hypothèse : les participants ayant un fort tempérament narcissique seraient plus agressifs que ceux au faible tempérament de même nature lorsqu'ils imaginent se faire blâmer publiquement. Le résultat de l'interaction des trois éléments a confirmé cette hypothèse. Les répercussions de la recherche font l'objet de discussions; les Forces armées pourraient trouver dans ce résultat une façon de réduire l'agressivité et de déterminer avec plus d'exactitude le profil des dirigeants de groupes adverses.

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Aggression; narcissism; self-relevant feedback; psychosocial effects

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