

GROUP NORMS AND SELF-AGGRESSIVE BEHAVIOR

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There is evidence from nonexperimental studies that group norms may influence both lethal and non-lethal self-aggressive behaviors. Nonexperimental studies, however, provide little information about potential cause-and-effect relationships. Accordingly, we experimentally examined whether self-aggressive group norms influence self-aggressive intent and behavior. Participants ($N = 107$) were exposed either to high-, low-, or mixed-self-aggressive group normative information, or were provided no normative information. After group norms were established, the participant stated his or her own self-aggressive intentions, and then completed a laboratory task designed to assess self-aggressive behavior. Results support the notion that group norms play a strong role in the expression of self-aggressive behavior. Clinical implications and the limitations of laboratory studies of self-aggression are discussed.

Classic theories and research in social psychology have focused a great deal of attention on the formation and acquisition of reference group norms (Newcomb, 1943; Newcomb & Wilson, 1966; Sherif, 1936, 1972). The tendency to conform to group norms has been well documented (e.g., Asch, 1951, 1952; Sherif, 1936) and signifies the strong influence reference groups have on individual behavior (Newcomb, 1950; Sherif & Sherif, 1964; Siegel & Siegel, 1957). Sources of normative group influence are thought to include such factors as enhanced self-image associ-

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ated with group identification and higher levels of self-esteem as a result of acceptance by the reference group (e.g., Leary & Downs, 1995; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004).

Although adherence to group norms is frequently adaptive, there is ample nonexperimental evidence showing an association between group norms and various self-harm behaviors, including binge eating (Crandall, 1988), excessive dieting (Huon & Walton, 2000), smoking (Dupre, Miller, Gold, & Rospenda, 1995; Epstein, Botvin, & Diaz, 1999; Unger et al., 2001), excessive alcohol consumption (Baer, Stacy, & Larimer, 1991; Novak & Crawford, 2001; Perkins & Berkowitz, 1986; Perkins & Wechsler, 1996; Wood, Nagoshi, & Dennis, 1992), adolescent cocaine use (Dupre, Miller, Gold, & Rospenda, 1995; Yarnold & Patterson, 1995), and gang involvement (Walker-Barnes & Mason, 2001). These behaviors can have dire social, psychological, and economic costs for the individual. However, any injuries suffered are unintentional and secondary to some other aspect of the behavior (e.g., inclusion in a desirable social group; the pleasurable effects of drug ingestion).

Intentional self-injurious behavior, also known as self-aggression, has been defined as any behavior that has the goal of inflicting physical harm on oneself (Hillbrand, 1992; Pigg & Geen, 1971), and can range in intensity from non-lethal tissue damage to highly lethal acts (Gluck & Sackett, 1974; Pigg & Geen, 1971). Findings from nonexperimental field studies show a relation between self-aggressive group norms and such self-aggressive behaviors as self-mutilation (Fennig, Carlson, & Fennig, 1995; Rada & James, 1982; Rosen & Walsh, 1989; Taiminen, Kallio-Soukainen, & Nokso-Koivisto, 1998; Walsh & Rosen, 1985) and attempted suicide (Brent, Kerr, Goldstein, & Bozigar, 1989; Haw, 1994; Robbins & Conroy, 1983). Although the results of nonexperimental field studies on group norms and self-aggression are informative, by their nature nonexperimental studies provide limited information regarding potential cause-and-effect relationships. Indeed, results from nonexperimental studies could be interpreted to mean that individuals prone to self-aggression are more likely to affiliate with self-aggressive groups, rather than group norms influencing individual group members' behavior.

Berman and colleagues recently conducted several experimental studies that show the presence of a single self-aggressive model elicits heightened self-aggressive behavior in an observer (e.g. Berman & Walley, 2003; McCloskey & Berman, 2003). Self-aggression was assessed using a novel laboratory task (the Self-Aggression Paradigm; SAP; Berman & Walley, 2003; McCloskey & Berman, 2003). In the SAP, the participant plays a competitive reaction-time game against a ficti-

tious opponent. On each reaction time trial the participant (and ostensibly the fictitious opponent) is asked to select a shock level that is self-administered if he or she is slower than the fictitious opponent on that particular trial. To examine modeling effects, at the end of each trial, the participant is notified about the level of shock the "opponent" selected to self-administer. Of course, wins and losses are preprogrammed (participants lost on half the trials), as are the shock selections of the opponent. In these studies, participants tended to follow the lead of the fictitious opponent, and increased or decreased their own shock settings accordingly.

Direct observation of one or more individuals engaging in self-harm behaviors, however, may not be necessary to influence self-aggressive behaviors in groups. Indeed, group norms established by group members' discussions may be sufficient to facilitate self-harm behaviors. Nonexperimental studies of adolescent groups indicate that peer discussions of harmful behaviors predict tobacco, alcohol, and marijuana initiation in previously abstinent children, as well as self-reported delinquency and violent behavior (see Dishion, McCord, & Poulin, 1999, for a review). Because Berman and colleagues' earlier studies (Berman & Walley, 2003; McCloskey & Berman, 2003) involved the observation of a single model, those studies do not shed light on whether group norms, established in the absence of explicit self-aggressive behavior, can also influence self-injurious behaviors. Moreover, it is not yet known if self-aggressive statements by group members influence behavior when referent group members express a range of "opinions" regarding self-aggressive behavior. It is possible that self-aggressive statements are less influential in groups that do not have a clearly established self-aggressive group norm; that is, when a mixed or conflicting opinion about self-aggression is present.

The purpose of this study was to experimentally investigate the relation between self-aggressive group norms and self-aggressive behavior, and to do so in a situation that did not involve direct observation of self-aggressive behavior. Participants in the study were led to believe that they were a member of a group in which all members were simultaneously but independently engaged in the same cover task—a competitive reaction time game against a computer. During the reaction-time task, participants were provided the opportunity to self-administer varying levels of electrical shock on trials they "lost" (as with our earlier studies, participants were preprogrammed to lose on half the trials). Group norms were established by having the other "group members" state, before the reaction-time task, the average level of shock they intended to self-administer. Participants were exposed to high-, low-, or mixed-self-aggressive reference groups, or were provided no norma-

tive information. After group norms were established, the participants stated their own shock intentions and then completed the reaction-time task in private. Self-aggressive behavior was defined by the average level of shock self-selected, and the frequency with which the most intense shock was self-administered. We predicted that participants' self-aggressive behavior would be consistent with either high- or low-self-aggressive group norms established before the reaction-time task. We further predicted that mixed group information, with both high- and low-self-aggressive statements by group members, would produce levels of self-aggression that were not markedly higher or lower than those produced in the absence of normative information.

METHOD

PARTICIPANTS

Participants were 79 women and 28 men who were college undergraduates (mean age = 20.57 years; $SD = 4.72$) and received course credit for participation. Participants were recruited via notices asking for volunteers interested in a laboratory study on how sensory feedback, in the form of electrical stimulation, affects reaction time. The research protocol and consent process were approved by the University of Southern Mississippi Institutional Review Board for the Protection of Human Subjects.

THE SELF-AGGRESSION PARADIGM (SAP)

The SAP is a laboratory measure of self-aggressive behavior (see Berman & Walley, 2003, for a detailed description of the apparatus) that is disguised as a competitive reaction-time task with another (fictitious) subject. During the SAP, the participant selects a shock from among a range of intensities to self-administer. Self-aggression is defined as the level of shock chosen. Validity for the SAP is supported by positive associations between shock intensity and self-ratings of suicidal and self-injurious behaviors, and the SAP discriminates individuals along a variety of dimensions that are theoretically or empirically related to extra-laboratory self-injurious behaviors (Berman, Jones, & McCloskey, 2005; Berman & Walley, 2003; McCloskey & Berman, 2003). SAP behavior is unrelated to self-rated motivation to win at the reaction-time task, actual reaction time performance, or social desirability response bias (Berman & Walley, 2003; McCloskey & Berman, 2003), supporting the notion that the SAP is not merely assessing competition or motivation to respond in a socially desirable manner. For the present study, we modi-

fied the SAP so that instead of playing against another person, the participant was informed that they were competing against a computer that would perform at about the same level as the typical college student. Recall that in earlier SAP studies, ongoing feedback about an opponent's shock selections was provided on all trials to examine modeling effects (Berman & Walley, 2003; McCloskey & Berman, 2003). Because we were interested in how group norms established by self-aggressive statements influence self-aggressive behavior, the computer competition cover task was employed as a means to eliminate information about actual shock settings of the "other participants." Use of the computer-competition cover task also minimized the possibility that referent group information would be confounded by subsequent social interactions during the reaction-time task.

PROCEDURE

On arrival at the research setting, the participant was told that four other participants were already seated and ready for the study, and four adjacent rooms with doors closed, labeled "Subject 1" through "Subject 4," were casually pointed out. The participant was escorted to a fifth adjacent room labeled "Subject 5," and seated in front of the SAP apparatus. The participant was again informed that the purpose of the task was to examine how sensory feedback, in the form of electrical stimulation, affects reaction time. The participant was also informed that he or she was competing against a computer set up in another room, and that the computer had been set to have a reaction time speed that is normal for most college undergraduate students. The participant was also told that, for efficiency, we were having multiple subjects (the fictitious participants in the other rooms) do the task at the same time. The other four "subjects" were in fact audio taped voices of confederates (two men and two women) that were used to establish the referent group norm. These audio-tapes were played over an intercom system and overheard by the participant. Thus, the participant was led to believe that he or she was working on the same task as the other four "subjects," and that all were working independently.

After the participant was seated in front of the SAP apparatus, fingertip electrodes were attached to the index and middle fingers. The participant was told that further instructions would be given to all five participants at the same time over the intercom system. Next the experimenter left the room, ostensibly to prepare all subjects for the experimental task. First, an upper pain threshold was determined for the participant and, ostensibly, for the four other subjects. This was done by administering increasingly intense shocks at 100-microampere intervals until the

shock intensity was the maximum the participant could tolerate. The experimenter led the participant to believe that the threshold procedure would be conducted in order of arrival to increase the credibility of the experimental situation. That is, the threshold determination was first done for fictitious Subjects 1 through 4, respectively, and then for the participant. Audio-taped responses of the fictitious subjects indicating when the shock became painful were played over the intercom system, and the participant also reported over the intercom system when the shock became painful.

Scripted task instructions were then read over the intercom system to the participant and, ostensibly, to the other four subjects. The "group" members were told that each of them was competing against a separate computer, and that all computers were preprogrammed to simulate the mean reaction time of the typical college student. The task was to press and hold down a reaction-time key, and then to release it as fast as possible when signaled to do so. If, on a given trial, they had a faster reaction time than the computer, they would not receive any shock. If they had a slower reaction time, they would receive a shock level chosen before that trial. The level of shock to be administered on losing trials was chosen by pressing one of ten buttons, labeled "1" through "10," on the SAP subject panel. The "10" button corresponded to the pain threshold determined before the reaction-time trials, and the "9" through "1" buttons represented decreasing percentages of the 10 shock.

After the task instructions were read, the participant and other "subjects" were asked what they thought their average shock selection across the reaction-time trials might be. The experimental manipulation was employed at this point. In the low-self-aggressive normative information condition, the participant heard the confederates state that they intended to set low self-shocks (shock intensities of "one," "two," "three," and "two," respectively). In the high-self-aggressive normative information condition, the participant heard the confederates state that they intended to set high self-shocks ("eight," "nine," "ten," and "nine," respectively). In the mixed self-aggressive information condition, the participant heard two "subjects" state high-intended shocks (randomly selected from "eight," "nine," or "ten") and two state low intended shocks (randomly selected from "one," "two," or "three"). In the no self-aggressive information condition, the participant and other "subjects" were asked to write on a sheet of paper the average shock level they intended to self-administer during the reaction-time trials. The mixed self-aggressive information and no information groups were used as comparison conditions, as individuals tend to select moderate shocks when clear social cues are not present (e.g., McCloskey & Berman, 2003). In the three conditions in which shock intentions were stated by the con-

federates, all statements were made in an emotionally neutral tone, and the gender of the voices was counterbalanced across statements. In the low self-aggression, high self-aggression, and mixed self-aggression conditions, participants stated their mean shock intentions over the intercom system last. After the participant stated (the three normative information conditions) or wrote down (in the no normative information) his or her intended shock, the experimenter indicated that they should all begin the reaction-time task. At that time, all communications among the group, and between the group and experimenter, ceased for the remainder of the SAP task.

The participant then completed 24 reaction-time trials. Regardless of actual reaction-time performance, the participant "lost," and thus received the shock chosen, on half of the trials. Winning and losing trials were preprogrammed and computer controlled. When the 24 trials ended, the participant was escorted from the room and debriefed to determine whether they accepted the social conditions of the study and to assess their understanding of the purpose of the study. The participant also rated the importance of winning at the task, discomfort associated with the shock threshold, perceived control over winning, and anxiety during the task on scales ranging from 1 (*not at all*) to 10 (*very much*). These questions were included to determine if potential group differences could be accounted for by motivational or affective factors. To determine if reference group information was attended to, the participant was also asked to recall the average level of shock each of the four confederates stated they intended to self-administer.

RESULTS

We first examined the degree to which each participant accepted our cover task with the posttask interview. Six participants who disbelieved the cover story or who touched on the true nature of the study were excluded to produce a final sample of 107.¹

MANIPULATION CHECK

After completing the SAP, participants in the high-, low-, and mixed conditions reported the level of shock each of the four other "subjects" stated they would self-administer. A one-way analysis of variance (ANOVA) was conducted using group norm condition (high-, low-, or

1. Analyses which included these excluded participants produced a very similar pattern of results

mixed) as the independent variable and the participants' reports of the average of the four fictitious subjects' stated shock as the dependent variable. Results indicate that the participants, on average, did indeed attend to group norm information. Posthoc Newman-Keuls mean comparisons indicated that, participants in the high-self-aggressive norm condition reported that the other members of the reference group intended to self-administer more intense shocks ($M = 8.99, SD = 0.05$) compared to the mixed-information condition ($M = 5.39, SD = 0.52$), which in turn was greater than participants in the low-self-aggression condition ($M = 1.99, SD = 0.05$), $F(2, 77) = 3695.93, p < .001$.

NORMATIVE INFLUENCE

The effect of group norms on self-aggressive behavior were examined in two ways: (1) by comparing participants' publicly stated self-aggressive intent in the four groups, and (2) by comparing actual shock selections across the four groups.

To examine whether group norms affected the level of shock that participants stated they would set, a 4×2 (Normative Information \times Gender) Analysis of Variance (ANOVA) was conducted on the average shock level participants stated they intended to use during the SAP. A main effect was found for group, $F(3, 99) = 13.62, p < .001, \eta^2 = .29$ (means and standard deviations are reported in Table 1). Post-hoc mean comparisons (Newman-Kuels test) revealed the high-self-aggressive group's intended shocks were higher compared to the other three groups, and the low-self-aggressive group's intended shocks were the lowest compared to the other three groups. No difference was found between the mixed-information and the no-information groups, indicating that when high-self-aggressive information is mixed equally with low-self-aggressive information, the effect is similar to providing no self-aggressive normative information. A significant main effect was also found for gender. The mean intended shock for men ($M = 6.71, SD = 2.03$) was significantly higher than the mean intended shock for women ($M = 5.08, SD = 2.33$), $F(1, 99) = 11.06, p = .001, \eta^2 = .10$. No normative information \times gender interaction was found.

Two SAP indices were used to test our prediction that group norms can affect actual self-aggressive behaviors: (1) the average shock selections across the 24 trials, and (2) the proportion of individuals in each group who choose the 10-shock (the maximum intensity available and a measure of more extreme self-aggression). A 4×2 (Normative Information \times Gender) ANOVA for average shock revealed that participants, on average, behaved in a manner consistent with the reference group. Specifi-

TABLE 1. Means and Standard Deviations of Intended Shock and Mean Shock as a Function of Reference Group

Group Condition	Intended Shock	Mean Shock
High Self-Aggression	7.43 (1.48)	7.50 (1.75)
Mixed Information	5.40 (2.32)	5.45 (2.20)
No Information	5.67 (1.96)	5.83 (2.30)
Low Self-Aggression	3.36 (1.72)	4.09 (2.46)

cally, a significant main effect for shock selection was found, $F(3, 99) = 6.43$, $p = .001$, $\eta^2 = .16$. Post hoc mean comparisons revealed that the high-self-aggressive group selected, on average, set shock levels that were significantly higher than participants in the other three groups, and the two comparison groups did not differ (Table 1). Participants in the low-self-aggressive group, on average, set lower average shocks compared to participants in the other three groups. A significant main effect was again found for gender. The mean shock for men ($M = 7.12$, $SD = 2.21$) was significantly higher than the mean shock for women ($M = 5.27$, $SD = 2.40$), $F(1, 99) = 12.05$, $p = .001$, $\eta^2 = .11$. No interaction was found.

In addition to participants' total shock selections, we examined the proportion of individuals who selected the 10-shock (the highest available shock) at least once. This shock intensity provides a valid measure of both self- (Berman & Walley, 2003) and other- (Berman, Gladue, & Taylor, 1993) directed aggression. Out of the 107 participants, only 34 used the 10-shock. Comparison of the low- and high-self-aggressive groups revealed that more participants in the high self-aggression condition (50%) set at least one extreme shock compared to their counterparts in the low-self-aggressive condition (15%), $\chi^2(1, 53) = 7.27$, $p < .01$.

SUPPLEMENTARY ANALYSES

There are a number of alternative explanations that could account for the group differences found. We conducted the following supplementary analyses to rule out these possibilities.

Upper Shock Threshold. If differences emerged between groups on pain thresholds, those groups that had higher upper thresholds may have found the shock more aversive, and thus selected lower shock. No differences, however, emerged among groups on upper shock threshold, $F(3, 106) = .95$, *ns*. In addition, no group differences emerged on post task ratings of subjective pain associated with the threshold shock, $F(3,$

106) = 1.10, *ns*, further supporting the notion that groups were approximately equivalent on pre-SAP threshold shock perception.

Analyses of Reaction-Time Performance. It is possible that group differences on self-aggression may be due to motivation to perform well on the reaction-time task. In order to examine this possibility, a 4×2 (Normative Information \times Gender) ANOVA was conducted using average reaction time as the dependent variable. No significant effects emerged from this analysis (all *ps* > .25). Mean (*SD*) reaction time was 256 (84) milliseconds.

Post-Task Questionnaire. Besides assessing participants' memories for confederates' self-selected shock levels and participants' acceptance of the cover story, the post-task questionnaire also examined several participant characteristics potentially relevant to shock selections. There were no group differences on desire to win at the reaction-time game (overall mean = 7.40; *SD* = 2.64), perceived control during the task (*M* = 6.14; *SD* = 2.61), or anxiety during the task (*M* = 7.31; *SD* = 2.62).

DISCUSSION

The purpose of this study was to experimentally examine whether an emerging reference group norm influences self-aggressive behavior. We hypothesized that self-aggressive statements and behaviors would be consistent with clearly established high- and low-self-aggressive group norms, and that contradictory or no-normative information would be associated with responses between these two extremes. Converging evidence emerged to support these hypotheses. Specifically, stated intended shock by participants, mean shock, and use of a painful shock were all influenced by group norms. This study extends previous experimental work on social influences on self-aggression (Berman & Walley, 2003; McCloskey & Berman, 2003) by showing that self-aggressive statements of referent group members can influence self-aggressive intent and behaviors in a situation that does not involve direct exposure to a self-aggressive model. In addition, our finding of diminished social influence in a mixed information group is reminiscent of Feldman's (1992) finding that a mixture of prosocial and antisocial youth can reduce antisocial influences.

Although the present experiment was designed to show that group norms can influence self-aggressive intentions and behaviors, the study results do not elucidate the psychological processes responsible for this phenomenon. These processes are of obvious interest and await future research. Researchers and theorists, however, have long understood that a variety of affective, motivational, and cognitive factors are responsible for conformity to group norms, including concerns to be correct or accurate,

or to be similar to other group members (e.g., Deutsch & Gerard, 1955; Divesta & Cox, 1960). By demonstrating the power of group norms to influence self-aggressive behavior under controlled laboratory conditions, the present study lays the groundwork for future studies to examine potential moderator (e.g., individual difference variables) or mediator variables of normative influences on self-aggression.

Recall that the most intense shock available to self-administer in the present study was a 10, which corresponded to the participant's pain threshold. Results indicate that the high- and low-self-aggressive norm groups differed on use of this extreme shock. Although highly unpleasant, however, this level of shock may not be representative of more extreme non-lethal self-aggressive acts committed in extra-laboratory settings. The SAP has been modified in several studies to increase the ecological validity of the task by providing participants the opportunity to choose a "severe" or "extremely painful" shock that they are told is twice the intensity of the highest shock afforded in the present study (e.g., McCloskey & Berman, 2003). Of course, the shock actually administered, if this intensity is chosen, is no higher than that of the upper threshold. Whether group norms influence the use of this more extreme shock option also awaits future research.

Although men, on average, evidenced higher levels of self-aggression, group information influenced men and women similarly. This finding should be interpreted cautiously, given the under-representation of men in the sample. However, this pattern of results indicates that men may be more self-aggressive compared to women under controlled laboratory conditions. This parallels research from laboratory studies of other-directed aggression, where men, in general, are more aggressive than women (e.g., Eagly & Steffen, 1986). Future research might benefit from studying a more gender-balanced and larger sample to determine if gender differences exist with respect to how group norms influence self-aggressive behaviors.

As is common in naturalistic group settings, the experiment was designed to allow the participant to express his or her self-aggressive "opinion" along with the remainder of the group members before engaging in the self-aggression task. Therefore, the results of the present study are limited by this sequencing of events. Indeed, the actual self-aggressive behavior of participants may have been guided by their public statements of shock intention in an effort to appear consistent. The fact that the participants' stated and actual shock setting behavior were similarly influenced by group norms is consistent with studies that have found that public statement of a behavioral intention can influence subsequent behavior (Deutsch & Gerard, 1955; Greenwald, Carnot, & Beach, 1987). In future studies, the effects of group norms on public

(stated intentions) and private (shock selections) self-aggressive behavior may be disentangled by including control conditions in which the participant is exposed to group norms but does not state his or her own "opinion" before actual self-aggressive behavior is observed.

As with all laboratory studies of group norms, researchers must be sensitive to potential experimenter influences. Because it is difficult to deceive participants into believing that the experimenter will not be aware of his or her behavior upon completion of the study, participants might feel some additional pressure to follow through with their stated intentions or to behave in a manner that is consistent with normative information. Disentangling public statements from actual behavior could minimize, but not eliminate, this potential confound.

Results of the present study have several potentially meaningful clinical implications. First, the presence of actual self-aggressive behaviors may not be necessary to facilitate self-aggressive acts in a social group. Indeed, clinicians treating patients in both inpatient and outpatient settings should be sensitive to symbols and discussions of self-injurious behaviors that can lead to the emergence of self-aggressive group norms. Second, results of the study also indicate that if some group members provide low-self-aggressive opinions, the effects of high-self-aggressive opinions are mitigated. Accordingly, peer-facilitated discussions leading to mixed- or low-self-aggressive group norms may limit the possibility that self-harm behaviors will actually be expressed in therapeutic social groups. Finally, correcting social norm misperceptions may be a useful treatment component for reducing the expression of self-aggressive acts. This therapeutic strategy has become a popular approach to reducing alcohol consumption rates and associated harm behaviors on college campuses. The basic idea is that college students tend to overestimate the rate of drinking on college campuses (Baer, Stacy, & Larimer, 1991; Perkins & Berkowitz, 1986; Perkins, Meilman, Leichliter, Cashin, & Presley, 1999) and that by correcting the perceived prevalence of drinking as part of an intervention known as motivational interviewing actual prevalence rates may be reduced as well (Haines, 1996; Rimal & Real, 2003; Steffian, 1999). The results of the present study provide indirect support for the notion that social norm interventions that include information about the relatively low rate of self-aggressive acts in peer groups may be an effective therapeutic treatment component.

The results of this study complement and extend the nonexperimental field literature on group processes and self-aggressive behavior by experimentally demonstrating that group norms can influence self-aggressive intent and behavior. Of course, the results of the present study are limited to individuals who self-selected into a study that used "mild to moderate" electric shock. Electric shock has been used in thousands of human

studies in the past few decades, including pain tolerance, conditioning, personality, and aggression studies. Self-selection biases, however, may be particularly noteworthy for self-aggression studies, especially if volunteers tend to be high on sensation seeking, impulsivity, or other variables thought to be associated with intentional and nonintentional self-injurious behaviors. We have found, however, that volunteers in our earlier SAP studies are similar (with respect to mean scores and score ranges on these and related variables) to volunteers in our nonshock studies or normative samples. Very few potential volunteers declined participation in our previous studies in which study respondents were not informed about the use of shock until so informed during a telephone prescreening. However, self-selection biases are a worthy consideration in laboratory studies using aversive stimuli, and should be addressed empirically as an integral part of future research designs.

Another question worthy of discussion has to do with the SAP's relation to extralaboratory acts of self-aggression (including actual self-harm behaviors). Previous studies have indicated that high shock selections on the SAP correlate with self-reported history of self-injurious and suicidal acts and thoughts, but less so with general impulsivity or aggression (Berman, Jones, & McCloskey, 2005; Berman & Walley, 2003; McCloskey & Berman, 2003). Thus, it appears that the present results do hold some meaning for group processes and self-aggressive behavior outside the laboratory. A "gold-standard" test to determine the SAP's validity, which has not yet been done, would be to use the SAP in a longitudinal study to predict self-aggressive behavior in both high-risk and community samples. In sum, because self-aggressive acts are complex multi-determined, exist along a continuum of lethality, and can be expressed in a multitude of ways, some caution must be used in generalizing the results of studies using laboratory measures of self-aggression to self-injurious acts in naturalistic settings.

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