In D. Abrams, J.M. Marques, & M.A. Hogg (Eds.),
The social psychology of inclusion and exclusion.
(c) 2004 Philadelphia: Psychology Press.

Social Exclusion Increases Aggression and Self-defeating Behavior while Reducing Intelligent Thought and Prosocial Behavior

Jean M. Twenge

San Diego State University

Roy F. Baumeister

Case Western Reserve University

To appear in The Social Psychology of Inclusion and Exclusion, edited by Abrams, Marques, & Hogg

Address correspondence to Jean M. Twenge, Dept. of Psychology, San Diego State University, 5500 Campanile Dr., San Diego, CA 92182-4611. Electronic mail can be sent to jtwenge@mail.sdsu.edu or to jeant@umich.edu.

Social Exclusion Increases Aggression and Self-defeating Behavior while Reducing Intelligent Thought and Prosocial Behavior

At some point in their lives, most people have the experience of feeling socially excluded: being alone on a Saturday night and feeling lonely; being rejected by peers, perhaps by means of cruel teasing; experiencing a divorce or the breakup of a romantic relationship; or having a friend cancel a social occasion because the friend found something more interesting to do. Because being with people is such a fundamental human need (Baumeister & Leary, 1995), these experiences can have a strong impact.

How do people react to social exclusion and rejection? We have begun to answer this question through a series of laboratory experiments. This research has concentrated on five main areas: aggression, prosocial behavior, self-defeating behavior, cognitive performance, and individual differences. We will discuss each of these areas in turn after outlining the general theory that provides a framework for the research.

The need to belong

Many things motivate human beings: the need for food, the need for shelter, the need to eat ice cream while watching late-night television. Obviously some needs are more fundamental than others. After primary needs such as food and shelter are satisfied, the need to belong is among the strongest of human motivations (Baumeister & Leary, 1995). People go to extraordinary lengths to affiliate with others, be liked by others, and belong to groups. These needs might have arisen from evolutionary pressures; our ancestors who were excluded from social groups often died because they found it difficult to hunt, gather, and defend themselves against predators with only an army of one (e.g., Ainsworth, 1989; Axelrod & Hamilton, 1981; Barash, 1977; Bowlby, 1969; Buss, 1990, 1991; Hogan, Jones, & Cheek, 1985; Moreland, 1987).

In addition, people excluded from groups were, almost by definition, unlikely to reproduce themselves. Thus the solitary hunters we described in the previous sentence were, most likely, no one's ancestors, even if they did manage to live out a normal lifespan.

Negative emotion is often a person's reliable clue that something is wrong and needs to be changed. Probably for this reason, thwarted belongingness usually leads to negative emotional experiences such as anxiety, depression, loneliness, and feelings of isolation (Baumeister & Leary, 1995; Baumeister & Tice, 1990; Gardner, Gabriel, & Diekman, 2000; Gardner, Pickett, & Brewer, 2000; Leary, 1990; Leary & Downs, 1995; Williams, Cheung, & Choi, 2000). Mark Leary and his colleagues have proposed that low self-esteem often results from feelings of rejection and loneliness (e.g., Leary & Baumeister, 2000; Leary, Tambor, Terdal, & Downs, 1995; Leary & Downs, 1995). Thus when people feel disliked by others, they often internalize these feelings and come to feel dislike for themselves. Leary suggests that self-esteem acts as a "sociometer" that measures a person's prospects for belongingness. High self-esteem means that oneself is the sort of person with whom others will want to affiliate, and low self-esteem means that oneself is the sort of person who may be neglected or even shunned by others. Because the need to belong is a powerful motivator, self-esteem acts as a "gas gauge" for our "fuel tank" of stored belongingness; people will make every effort to replenish it if it gets too low.

In our research, we sought to expand upon this previous research on emotions and self-esteem, addressing the behavioral outcomes of social exclusion. When people are rejected by others, how do they react? When people hear they are likely to be alone later in life, what patterns can we find in their subsequent behavior?

Aggression: If You Can't Join Them, Beat Them

Over the past few years, Americans have been shocked and saddened by a series of shootings at our nation's high schools. In most of these cases, the perpetrators have been young men who felt rejected and bullied by their peers (Leary, Kowalski , Smith, & Phillips, 2001). The example of school violence is not an isolated one: social rejection or exclusion often leads to impulsive acts. Children who are rejected by their peers are more aggressive (Coie, 1990; Newcomb, Bukowski, & Pattee, 1993), and many perpetrators of violence are young men who feel cut off from close relationships with family members as well as with age mates (Garbarino, 1999; Walsh, Beyer, & Petee, 1987).

Adults are not immune to this effect. For example, single men commit more crimes than married men do, even when age is controlled (Sampson & Laub, 1993). They are more likely to be arrested for speeding or reckless driving (Harrington & McBride, 1970), and are more likely to be involved in car accidents (Harano, Peck, & McBride, 1975), especially those related to alcohol (Richman, 1985). In general, single people abuse alcohol and drugs at a higher rate than married people (Williams, Takeuchi, & Adair, 1992). These trends also appear in the society at large. In the United States, social bonds between people have weakened in recent decades (Fukuyama, 1999; Putnam, 2000) at the same time that impulsive antisocial behaviors such as crime, drug abuse, and violence have increased.

All of these sources and trends suggest that social exclusion is correlated with increased aggressive and antisocial behavior. However, the opposite relation is actually more logical: when one is rejected, it makes sense to be less aggressive and more prosocial, in an attempt to win back friends and establish affiliation. In fact, Williams, Cheung, and Choi (2000) found that participants who were ostracized were later more likely to conform to other's judgments, which

those researchers regarded a prosocial act designed to make the person more appealing to potential group members. Whether social exclusion is related to more aggressive or less aggressive behavior, the previous research gives little suggestion of the direction of causation. For example, social exclusion could cause aggression, but it is equally plausible that aggressive behavior could cause exclusion by others. Mediation by negative emotion might also occur. Given these unanswered questions, we undertook a series of experimental studies to address the question of social exclusion and aggression (see Table 1).

The most straightforward tests of the link between social exclusion and aggression occurred in Experiments 4 and 5 of Twenge, Baumeister, Tice, & Stucke (2001). In Experiment 4, participants spent the first 15 minutes of the study interacting with a group of their same-sex peers. They were then placed in separate rooms and asked to nominate the two group members they wanted to work with on a subsequent task. By random assignment, half of the participants then heard that none of the other participants had chosen them (this was the rejected condition). The other half heard that everyone had chosen them (accepted condition). All participants were then provoked: they received a very negative evaluation of an essay that they had written, supposedly issued by a new participant who had just arrived at the lab (and thus not one of the people who had accepted or rejected them). Participants then played a noise-blasting game with this new person; they were told that whoever lost a reaction time trial would hear a blast of noise, the intensity and duration of which was controlled by the other player. Thus participants had a weapon that they could use to hurt another human being. We wanted to know if rejected participants would be more or less aggressive than accepted participants.

The results clearly showed that rejected participants were more aggressive toward the person who insulted them. Rejected participants blasted louder noise at their opponents and were

also more aggressive on a composite measure of aggression (consisting of noise loudness and duration). The two conditions did not differ on a self-report measure of emotion, and the results linking social exclusion and aggression did not change when controlled for negative or positive emotion.

In the next study, we sought to broaden the focus. The preceding study showed that rejected people became highly aggressive toward someone who insulted and provoked them. Would they also be aggressive toward someone who had not insulted and provoked them? We used the same procedure save one important change: in this study, the other person did not deliver any critical insulting evaluation to the participants. They did not receive any evaluation of their essay from the opponent; in fact, they had no interaction at all with the person with whom they played the noise-blasting game. The results showed that rejected participants were still significantly more aggressive than participants who had been accepted: they blasted louder noise and for a longer time. Thus social exclusion causes an increase in aggressive behavior even when participants are not provoked.

We obtained converging evidence for these conclusions by using a different manipulation of social exclusion and a different measure of aggression. In this experiment, we manipulated social exclusion by giving participants false feedback on a personality test. In the crucial condition (future alone), participants heard that they were likely to be alone later in life. In contrast, participants in the future belonging condition heard that they would have good relationships throughout life. We also included a misfortune control group, who heard that they would likely be accident prone in the future (thus a negative outcome, but one unrelated to relationships). After receiving the future prediction, all participants were then provoked by a negative essay evaluation. They were told that the person who had evaluated their essay had

applied for a research assistant position that was very competitive; the participant was asked to evaluate the applicant, rating him/her on a list of attributes. Thus, the participant could hurt or help someone who had insulted them. Written evaluations have been used to measure aggression in several other studies (e.g., Kulik & Brown, 1979; Ohbuchi, Kameda, & Agarie, 1989; O'Neal & Taylor, 1989; for a review, see Baron & Richardson, 1994, pp. 64-66).

Consistent with the results of the noise-blasting studies, participants who heard that they were likely to be alone later in life were more aggressive toward the person who had insulted them, issuing a sharply negative job evaluation. In contrast, the future belonging and misfortune control groups gave neutral evaluations of the applicant. The difference with the misfortune control group is informative; the forecast of a negative future is apparently not the cause of the heightened aggression. Only the forecast of a lonely future causes a notable increase in aggression.

Last, we sought to establish whether excluded individuals would also be aggressive toward someone who praised them. We used the same procedure as in the previous study, except participants received a positive evaluation of their essay. Under these circumstances, we found that all participants gave a positive evaluation of the applicant, with no differences between the future alone, future belonging, and misfortune control. Thus socially excluded participants are more aggressive than others when they are insulted and when they are neither insulted nor praised; however, they are not more aggressive toward someone who praises them.

Thus, this series of experiments shows that social exclusion can cause a marked increase in aggressive behavior. The average effect size for this set of studies is 1.33, meaning that rejected individuals scored 1.33 standard deviations higher on measures of aggression compared

to the control groups. Anything over .80 standard deviations is conventionally regarded as a large effect, so the impact of social exclusion appears to be quite large.

Why does social exclusion lead to increased aggression? Negative emotional states do not seem to be the culprit, as they did not mediate the effect in any of the studies. Although definitive evidence is not available, it seems plausible that socially excluded individuals become antisocial because they no longer see the point in being prosocial. When we are accepted, our social behavior is shaped by the demands of others; when we are rejected, we may indulge our more selfish and base impulses and act more aggressively.

Prosocial behavior: Help! I Need Somebody

Although we find that social exclusion causes aggressive behavior, it could be that excluded individuals could act in prosocial ways when they are given the explicit opportunity to do so. Thus we undertook another series of experiments to explore a possible link between social exclusion and prosocial behavior. Previous evidence and theory suggests that social exclusion could cause either increased or decreased prosocial behavior.

If people are strongly motivated to form and maintain social bonds (Baumeister & Leary, 1995), then the loss of social connection frustrates this basic human need. This should motivate people to desire new connections. By helping others and cooperating with them, people could presumably prove their social value to others; in this way they could induce others to like and depend on them. It seems only rational that the socially excluded person would try harder to get along with others, and an increase in prosocial behavior seems a promising way to accomplish this. There is some empirical evidence to support this idea (e.g., Gardner, Pickett, and Brewer, 2000; Williams, Cheung, & Choi, 2000; Williams & Sommer, 1997).

The opposite prediction, that social exclusion could reduce prosocial behavior, is also plausible. Under this view, prosocial behavior depends on believing one is part of a community in which people mutually seek to aid, support, and love each other. When people are excluded, their motivation to perform such behaviors would be reduced or eliminated. Excluded people might feel that following social rules is no longer necessary, or that there is no point in continuing to make any such efforts or sacrifices. In many cases, doing what is prosocial and right for the group conflicts with self-interest. Most conceptions of virtue and socially desirable behavior promote prosocial actions that go against the individual's own wishes and desires (e.g., Hogan, 1973; Baumeister & Exline, 1999). For example, children must be socialized into helping others (Cialdini & Kenrick, 1976; Cialdini, Kendrick, & Baumann, 1981; Perry, Perry, & Weiss, 1986). Freud (1930) proposed that the superego (an internal system of restraint) is crucial for making civilized communal life possible: It emerges as a capacity to thwart instinctual or selfish interests in order to pursue actions that are valued by the group. Without the socializing context provided by social inclusion, the psychological restraints that support prosocial behavior may be diminished, and the prosocial impulse might be extinguished.

Prior research also provides correlational support for a connection between social rejection and decreased prosocial behavior, although it is unclear what causes what. Numerous correlational studies have found that children who are rejected by their peers act less prosocially than children who are accepted by their peers (Asher & Coie, 1990; Coie & Dodge, 1988; Gest, Graham-Berman, & Hartup, 2001; Mize & Ladd, 1988; Wentzel & Erdley, 1993; Wentzel & McNamara, 1999). Many studies have found that prosocial actions are more highly correlated with social acceptance than antisocial actions are (Asher & Renshaw, 1981; Bukowski & Newcomb, 1984; Hartup, Glazer & Charlesworth, 1967; Parkhurst & Asher, 1992; Schonert-

Reichl, 1999). However, these findings are correlational, so it is unclear if social exclusion causes less prosocial behavior or vice versa.

We performed a series of experimental studies to determine if social exclusion causes more or less prosocial behavior (Twenge, Ciarocco, & Baumeister, 2001). In the first experiment, we used the future outcomes manipulation mentioned previously: future alone participants heard that they were likely to be alone later in life, compared to three control groups (future belonging, misfortune control, and a pure control group hearing no future prediction). After the manipulation, the experimenter gave each participant two dollars in quarters. She then mentioned that the lab was taking up a collection for the Student Emergency Fund, and pointed to a collection box on the table. The amount of money donated by each participant served as the measure of prosocial behavior. The results were striking: on average, future alone participants donated less than $0.40, while participants in the other three conditions donated an average of $1.50 – thus nearly three times as much. Only 37% of the Future Alone participants made any donation at all, whereas every single participant (100%) in the other three conditions gave at least something. These results were not mediated by either self-reported emotion or by state self-esteem.

In the second experiment, we manipulated social exclusion via acceptance or rejection by peers. The experimenter said that the participant could not complete the regular part of the experiment, so he or she could either leave or could help the experimenters by doing between one and three short studies for the remainder of the hour. The experimenter explained that the experimental credit would be the same either way. The results of this experiment again showed that excluded participants were markedly less helpful. Rejected participants volunteered for only .30 extra experiments, whereas accepted participants volunteered for 1.70 experiments on

average. Only 20% of rejected people volunteered to help at all, whereas 90% of accepted people volunteered to help with at least one study.

The first two experiments both measured prosocial behavior that involved the sacrifice of self-interest: participants were asked to give up a scarce resource (either money or time). In the third experiment, we measured a prosocial behavior that did not involve a noticeable sacrifice. We manipulated social exclusion using the prediction of future outcomes. After the participant completed an emotion measure, the experimenter reached toward a shelf and knocked over a can of pencils. The measure of helping was the number of pencils the participant helped pick up from the floor. Even though this form of helping did not involve a sacrifice, socially excluded participants were still considerably less helpful compared to the people in the other groups. The future alone group barely helped at all; on average, they helped pick up less than one pencil. In contrast, the other groups helped pick up between eight and nine pencils on average. Only 15% of the Future Alone participants helped pick up any pencils at all, compared to the 64% who helped in the other three conditions. These effects were not mediated by mood, and trait self-esteem was not a significant moderator variable. Thus, again, socially excluded people were less helpful than others.

In the last two experiments, we measured prosocial behavior in a mixed-motive game. After receiving the prediction of different future outcomes, participants played the Prisoner's Dilemma game with a computer program (they believed they were playing with another participant). In this game, participants choose to either cooperate or compete on each turn; a point matrix rewards players when both cooperate, takes points off when both compete, and awards more points to the competitor when one player competes and the other cooperates. Participants were paid $.20 for each point they had at the end of the game. Overall, cooperating

results in a high point total at the end of the game. In one experiment, the computer was programmed to begin by competing and then play a tit-for-tat strategy; in the other, it was programmed to cooperate on the first turn before playing tit-for-tat. Both experiments produced the same result: future alone participants chose to cooperate significantly less often than the other groups. This occurred even though cooperating would have given the greatest return to the self in yielding a higher point total and thus more money.

The results of these studies are quite consistent and striking. Socially exclusion causes people to become less helpful in general. They are less helpful toward a specific person who asks for help or toward a vaguely defined category of needy comrades. They are less helpful toward a peer and toward a high status person. They are less helpful regardless of whether helping others would cost them something, cost them nothing, or even plausibly benefit them.

Self-defeating Behavior: If It Feels Good Right Now, Do It

Self-defeating behavior has long been a puzzle to psychology, leading some theorists to propose that people have innate self-destructive tendencies (Freud, 1965/1933; Menninger, 1966/1938; Piers & Singer, 1953). However, there is very little evidence that people ever explicitly wish or try to bring suffering, harm, or failure upon themselves, and the hypothesis of self-destructive desires (whether innate or acquired) is not supported by research (see Baumeister, 1997; Baumeister & Scher, 1988). Instead, most self-defeating behavior results when people choose pleasurable short-term outcomes that carry long-term costs, rather than more beneficial long-term outcomes. Another route to self-defeating outcomes is poor self-regulation and the selection of counterproductive strategies based on a misunderstanding of self and world.

Previous research has found a correlational link between social exclusion (that is, not having close, meaningful relationships) and self-defeating behavior. Suicide is the ultimate self-defeating act, and people with fewer social attachments are more likely than others to commit suicide (Baumeister, 1990; Durkheim, 1897/1951; Trout, 1980). Single people are more likely to abuse alcohol and drugs (Williams, Takeuchi, & Adair, 1992), which is sometimes regarded as a self-defeating pattern. In addition, married people are often mentally and physically healthier than single, divorced or widowed individuals (Bloom, White, & Asher, 1979; DeLongis, Folkman, & Lazarus, 1988; Goodwin, Hunt, Key, & Samet, 1987; Lynch, 1979; Williams, Takeuchi, & Adair, 1992). These health problems may well be linked to self-defeating behaviors and poor self-regulation, because poor regulation of many behaviors (e.g., overeating, smoking, failing to exercise, alcohol and drug addiction) causes harm to health. As with many of the previous studies on social exclusion, however, these studies are correlational and cannot establish causation.

We again used laboratory manipulations of social exclusion, this time measuring several self-defeating behaviors (Twenge, Catanese, & Baumeister, 2001). All of these experiments used the future alone manipulation, in which participants hear they are likely to be alone later in life (compared to the future belonging and misfortune control groups).

To study self-defeating behavior, we began by adapting a procedure that measured preference for a foolish, risky choice over an objectively superior play-it-safe option (Leith & Baumeister, 1996). Participants were given a choice between two lotteries. The risky choice offered a small chance of winning a moderate amount of money (2% and $25), whereas the safe choice offered a large chance of winning a small amount of money (70% and $2). In both cases, losing entailed the stressful experience of hearing a tape of very unpleasant noise. Worked out

mathematically, the safe choice was by far the most beneficial, offering the greatest payout in the long run and a lesser chance of hearing the noise. Thus, choosing the risky lottery was a self-defeating choice. Sure enough, 85% of the participants in the two control conditions favored the play-it-safe option. But socially excluded people were much more likely to choose the risky lottery choice (about 66% of the time). The effect was not mediated by mood.

Next, we measured self-defeating behavior by asking participants to make three choices related to health. They could either receive a candy bar or a granola bar, either read a magazine or fill out a health questionnaire, and either sit idly or run in place before measuring a pulse. In each case, the second choice was explicitly presented as healthier. Thus the first item in each pair, although being more pleasurable, was also less healthy and thus self-defeating in the long run. Consistent with the previous results, socially excluded participants made fewer healthy choices (.78), compared to 1.94 in the other conditions.

In yet another study, we measured procrastination, which is a classic self-defeating behavior. After hearing the future prediction, participants were told that they would take a predictive and important math test later in the experiment. They were given 15 minutes in which they could practice for the test (using a series of very boring math problems), do nothing, or actively procrastinate by reading magazines or playing video games. The experimenter watched from behind a one-way mirror, recording how the participants spent their time. The results showed that the future alone participants spent nearly half of their time procrastinating (7.12minutes), compared to only three minutes on average for the participants in the other two conditions. Thus the future alone participants were much more likely to procrastinate by doing pleasurable things rather than concentrating on boring math problems that nevertheless might help them do better on an upcoming test.

Overall these results show that excluded participants are more likely to engage in self-defeating behaviors. Somewhat to our surprise, none of the effects were mediated by mood. Across all of our studies, we have found very few significant differences in mood, and these studies used three different self-report mood measures. Apparently social exclusion bypasses negative mood and goes straight to causing self-defeating behavior. Another possibility for a mediator is cognitive disorientation, possibly including a loss of future orientation and a failure of rational, meaningful thought (e.g., Baumeister, 1990; Pennebaker, 1989; Pennebaker et. al., 1990; Wyer & Srull, 1986). This disorientation may be what impairs people's ability to self-regulate their behavior effectively and do things that will be good for them in the long run. This is one reason why we proceeded to study cognitive performance in our next series of studies.

Cognitive Performance: Social Exclusion Reduces Intelligent Thought

Like many of the topics we have addressed, competing predictions can be made about the effect of social exclusion on intelligent thought. Social exclusion could lead to increased intelligent thought. If one is going to survive alone, considerable cognitive skills are necessary, and so it would be adaptive to become more mentally focused after being excluded from a social group. After all, survival often requires that many tasks (such as obtaining and preparing food) must be carried out successfully, and the lone individual cannot count on others to assist him or her. Hence one might expect social exclusion to stimulate intelligent thinking.

On the other hand, intelligent thought may have arisen in the first place as a tool for facilitating social groups and their interaction. Reasoning about social relationships is one of the most complex tasks many people perform on a daily basis. Given this, the socially isolated individual may have less need for intelligent thought.

These competing predictions motivated us to examine how social exclusion might affect measures of cognitive performance. We used the future alone manipulation in a series of experiments described here (Baumeister, Twenge, & Nuss, 2001). In the first experiment, participants took the General Mental Abilities Test (Janda, Fulk, Janda, & Wallace, 1995; reprinted in Janda, 1996), which is a paper-and-pencil intelligence test. Participants were given six minutes to answer as many questions as they could. Future alone participants answered significantly fewer questions correctly, as compared to those in the future belonging and misfortune control groups. Future alone participants also attempted significantly fewer problems on the IQ test. These results were not mediated by mood.

The second experiment used a more complex design. We measured cognitive encoding for half of the participants, who received the exclusion manipulation, read two reading passages, and were then informed that the exclusion manipulation was not true. They then answered a series of questions about the reading passages. Thus they read the passages under the influence of exclusion but answered the questions after the manipulation had been nullified by the debriefing. In the recall condition, the other half of the participants read the two passages, received the exclusion manipulation, and then answered the questions. Thus these participants read the passages under normal conditions but answered the questions under the influence of social exclusion. This way we could ascertain whether social exclusion impaired encoding (reading) or recall, or both. In addition, the reading passages included one difficult passage and one easy passage.

The results showed that social exclusion affected only one type of cognitive performance: recall of the difficult passage. There were no differences on either passage in the encoding conditions, and no differences in performance on either recall or encoding of the easy passage.

Thus encoding of information seems unaffected, while recall of complicated information is affected by social exclusion.

However, these results may have been caused by the reasoning required in the questions about the difficult passage. Socially excluded participants had no trouble recalling information about the easy passage, and those questions were straightforward. The questions on the difficult passage, however, required a higher level of thought and reasoning. Thus in the third experiment we assigned some participants to a simple recall task (remembering nonsense syllables they had learned), whereas other participants were given questions from a GRE analytical test that included difficult logic and reasoning problems. The results showed that social exclusion affected only performance on the analytical problems. Recall of nonsense syllables was not affected. Thus the cognitive impairment engendered by social exclusion focuses on higher-order reasoning, and not the simple recall of items.

Overall, these results suggest that social exclusion reduces intelligent thought but not information encoding or simple recall. Socially excluded participants answered fewer IQ test questions correctly, had more trouble recalling information about a difficult reading passage, and performed poorly in analytical reasoning. In contrast, socially excluded participants were able to encode information, recall information about an easy reading passage, and recall nonsense syllables effectively.

Individual Differences: Narcissism and Self-esteem

The previous studies have shown that social exclusion has strong and consistent effects on people, causing increased aggression, decreased prosocial behavior, more self-defeating behavior, and diminished cognitive performance. However, it seems plausible that there are individual differences in responses to exclusion. In particular, some people may be more

aggressive than others after experiencing rejection by peers. We hypothesized that individuals high in narcissism might react to rejection with higher levels of anger and aggression (Twenge & Campbell, 2001). In a first study, we asked participants to recall a time when they had felt rejected, and to respond to a series of emotion words describing how they felt during this real-life experience. After controlling for passive negative emotions such as sadness, there was a significant correlation between trait narcissism and feelings of anger after rejection. Trait self-esteem was not correlated with anger. In the second study, we manipulated social rejection as we did in several studies mentioned above; participants met in the lab, chose people for further interaction, and then learned that either no one or everyone had chosen them. Narcissism was significantly correlated with feelings of anger after rejection, but not feelings of anger after acceptance.

We then moved on to examining behavioral aggression. We used the same noise-blasting game employed in the aggression studies presented earlier in the chapter: participants believe they are playing a computer game against another person, and they can choose the level and duration of noise they blast against their opponent. In this study, participants experienced a rejection by their peers and were then told they would play the game with someone from their group (thus someone who rejected them). Individuals high in narcissism were significantly more aggressive toward someone who had rejected them, compared to those low in narcissism. Self-esteem was unrelated to aggressive responding. These results are consistent with other findings indicating that high narcissism predisposes people toward aggression and hostility, whereas standard self-esteem measures show no effect (Bushman & Baumeister, 1998). Social exclusion apparently brings out the hostile tendencies of narcissists.

Would rejected narcissists also be aggressive toward a new person after experiencing a social rejection? In the last study, we found that narcissism was again correlated with aggression even when participants believed they were blasting noise against a new person —someone who had arrived late at the lab and thus not a member of the group who had issued the rejection. We also included a control group of accepted individuals in this study; there was no correlation between narcissism and aggression after participants were socially accepted.

These results provide an interesting application to the school shootings that have occurred across the United States in the past several years. Almost all of the school shooters experienced rejection and cruel teasing at the hands of their peers (Leary et.al., 2001). In addition, the shooters at Columbine High School displayed narcissistic tendencies, stating that they could make people believe anything and debating which Hollywood director would film their story. Many pundits have suggested that boys who perpetrate school violence are low in self-esteem. Our results, however, suggest that self-esteem has no relation to aggressive behavior after social rejection. Instead, high narcissism (which could be mistaken for high self-esteem) is a significant predictor of whether someone will turn aggressive after experiencing a social rejection.

Conclusions

The results of these studies suggest that social exclusion has broad and powerful effects on behavior. Moreover, most of these effects appear to be undesirable. Our hypotheses about how being rejected or excluded might cause people to turn over a new leaf, seek new ways of making friends, become helpful or altruistic toward new potential partners, and even become more thoughtful were repeatedly contradicted.

Instead, the effects of social exclusion were uniformly, even disturbingly undesirable. We found that rejected people became more aggressive, not just toward people who had rejected

them, but toward new people who had provoked them – and ominously, toward new "innocent bystanders" who had not done anything to them. Rejected people spared only those few who had explicitly been kind and friendly toward them.

Further, socially excluded people showed broad declines in prosocial behavior. They were less generous toward needy comrades (the Student Emergency Fund), toward an experimenter who asked for a favor, and toward someone who simply needed a little help after a mishap. They were less cooperative toward a peer in a mixed-motive game. They were unhelpful regardless of whether helping would cost them money and effort, would cost them essentially nothing, or might even benefit them.

Just as social exclusion made people less desirable partners to others, it also made people less prone to take care of themselves. Social exclusion apparently causes self-defeating behavior. Rejected people took more foolish risks, made more unhealthy choices, and procrastinated more than people who had been accepted.

Intelligent thought is apparently another casualty of social exclusion. We found that socially excluded people performed more poorly on an intelligence test and on tests of complex reasoning. On simple, straightforward cognitive tasks they seemed to do as well as others. Thus, the higher cognitive functions appear to suffer in the wake of rejection.

Last we found that people with inflated views of self and a strong motivation to garner the admiration of others – namely narcissists – exhibited the strongest negative reactions to social exclusion. These were particularly prone to exhibit aggression in the wake of being rejected. Such individuals are known to have hostile tendencies, and social rejection appears to bring these out.

Perhaps ironically, the only sphere in which we failed to find substantial negative effects in the wake of social exclusion is emotion. In some studies we have found no significant increase in negative emotion as a result of social exclusion. In others, we have found small increases, but these are much smaller than the behavioral effects and do not seem to mediate the behaviors. When we began this line of work, we predicted strong emotional consequences would be central and would underlie all the behavioral effects, and indeed we had braced ourselves for dealing with substantial amounts of emotional distress. But it never materialized. Although emotional distress would have furnished a clean, tidy explanation for the effects of social exclusion, we are not entirely disappointed at its failure, because it raises a fascinating challenge as to what the inner processes are. Our current work will emphasize the search for these intrapsychic mediators.

In any case, these findings confirm the view of human beings as highly social creatures with a strong need to belong. Multiple forms of desirable, adaptive behavior appear to break down when individuals are excluded by social groups. To find a fully functioning human being, it may be generally necessary to look in the middle of a rich, supportive social network.

References

Ainsworth, M. D. (1989). Attachments beyond infancy. American Psychologist, 44, 709-716.

Asher, S. R., & Coie, J. D. (1990). Peer rejection in childhood. New York: Cambridge University Press.

Asher, S. R., & Renshaw, P. D. (1981). Children without friends: Social knowledge and social skill training. In S. R. Asher & J. M. Gottman (Eds.), The development of children's friendships (pp. 273-296). New York: Cambridge University Press.

Axelrod, R., & Hamilton, W. D. (1981). The evolution of cooperation. Science, 211, 1390-1396.

Barash, D. P. (1977). Sociobiology and behavior. New York: Elsevier.

Baron, R. A., & Richardson, D. R. (1994). Human Aggression, 2nd Ed. New York: Plenum.

Baumeister, R. F. (1990). Suicide as escape from self. Psychological Review, 97, 90-113.

Baumeister, R.F. (1997). Esteem threat, self-regulatory breakdown, and emotional distress as factors in self-defeating behavior. Review of General Psychology, 1, 145-174.

Baumeister, R.F., & Exline, J. J. (1999). Virtue, personality, and social relations: Self-control as the moral muscle. Journal of Personality, 67, 1165-1194.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. Psychological Bulletin, 117, 497-529.

Baumeister, R. F., & Scher, S. J. (1988). Self-defeating behavior patters among normal individuals: Review and analysis of common self-destructive tendencies.

Psychological Bulletin, 104, 3-22.

Baumeister, R. F., & Tice, D. M. (1990). Anxiety and social exclusion. Journal of Social and Clinical Psychology, 9, 165-195.

Baumeister, R. F., Twenge, J. M., & Nuss, C. K. (2001). Effects of social exclusion on cognitive processes: Anticipated aloneness reduces intelligent thought. Under review at the Journal of Personality and Social Psychology.

Bloom, B. L., White, S. W., & Asher, S. J. (1979). Marital disruption as a stressor: A review and analysis. Psychological Bulletin, 85, 867-894.

Bowlby, J. (1969). Attachment and loss: Vol 1. Attachment. New York: Basic Books.

Bukowski, W. M., & Newcomb, A. F. (1984). Stability and determinants of sociometric status and friendship choice: A longitudinal perspective. Developmental Psychology, 20, 941-952.

Bushman, B.J., & Baumeister, R.F. (1998). Threatened egotism, narcissism, self-esteem, and direct and displaced aggression: Does self-love or self-hate lead to violence? Journal of Personality and Social Psychology, 75, 219-229.

Buss, D. M. (1990). The evolution of anxiety and social exclusion. Journal of Social and Clinical Psychology, 9, 196-210.

Cialdini, R. B., & Kendrick, D. T. (1976). Altruism as hedonism: A social development perspective on the relationship of negative mood state and helping. Journal of Personality and Social Psychology, 34, 907-914.

Cialdini, R. B., Kendrick, D. T., & Baumann, D. J. (1981). Effects of mood on prosocial behavior in children and adults. In N. Eisenberg-Berg (Ed.), The development of prosocial behavior. New York: Academic Press.

Coie, J. D. (1990). Toward a theory of peer rejection. In S. R. Asher & J. D. Coie (Eds.), Peer rejection in childhood (pp. 365-401). New York: Cambridge University Press.

Coie, J. D., & Dodge, K. A. (1988). Multiple sources of data on social behavior and social status in the school: A cross-age comparison. Child Development, 59, 815-829.

Darley, J. M., & Latane, B. (1968). Bystander intervention in emergencies: Diffusion of responsibility. Journal of Personality and Social Psychology, 8, 377-383.

DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. Journal of Personality and Social Psychology, 54, 486-495.

Durkheim, E. (1951). Suicide. (J. A. Spaulding & G. Simpson, Trans.) New York: Free Press. (Original work published 1897)

Freud, S. (1930). Civilization and its discontents. (J. Riviere, trans.). London: Hogarth Press.

Freud, S. (1965). New introductory lectures on psychoanalysis (J. Strachey, trans.). New York: Norton. (Original work published 1933)

Fukuyama, F. (1999). The great disruption: Human nature and the reconstitution of social order. New York: Free Press.

Garbarino, J. (1999). Lost boys: Why our sons turn violent and how we can save them. San Francisco: Jossey-Bass.

Gardner, W. L., Gabriel, S., & Diekman, A. (2000). The psychophysiology of interpersonal processes. In J. T. Cacioppo, L. G. Tassinary, & G. G. Bertson (Eds.), The Handbook of Psychophysiology, 2nd Edition (pp. 643-664). Cambridge, MA: Cambridge University Press.

Gardner, W. L., Pickett, C. L., & Brewer, M. B. (2000). Social exclusion and selective memory: How the need to belong influences memory for social events. Personality and Social Psychology Bulletin, 26, 486-496.

Gest, S. D., Graham-Bermann, S. A., & Hartup, W. W. (2001). Peer experience: Common and unique features of number of friendships, social network centrality, and sociometric status. Social Development, 10, 23-40.

Goodwin, J. S., Hunt, W. C., Key, C. R., & Samet, J. M. (1987). The effect of marital status on stage, treatment, and survival of cancer patients. Journal of the American Medical Association, 258, 3125-3130.

Gottlieb, J., & Carver, C. (1980). Anticipation of future interaction and the bystander effect. Journal of Experimental Social Psychology, 16, 253-260.

Harano, R. M., Peck, R. L., & McBride, R. S. (1975). The prediction of accident liability through biographical data and psychometric tests. Journal of Safety Research, 7, 16-52.

Harrington, D. M., & McBride, R. S. (1970). Traffic violations by type, age, sex, and marital status. Accident Analysis and Prevention, 2, 67-79.

Hartup, W. W., Glazer, J. A., & Charlesworth, R. (1967). Peer reinforcement and sociometric status. Child Development, 38, 1017-1024.

Hedge, A., & Yousif, Y. H. (1992). Effects of urban size, urgency, and cost on helpfulness: A cross-cultural comparison between the United Kingdom and the Sudan. Journal of Cross-Cultural Psychology, 23, 107-115.

Hogan, R. (1973). Moral conduct and moral character: A psychological perspective. Psychological Bulletin, 79, 217-232.

Hogan, R., Jones, W. H., & Cheek, J. M. (1985). Socioanalytic theory: An alternative to armadillo psychology. In B. R. Schlenker (Ed.), The self and social life (pp. 175-198). Newberry Park, CA: Sage.

Janda, L. (1996). The psychologists' book of self-tests. New York: Berkley.

Janda, L. H., Fulk, J., Janda, M., & Wallace, J. (1995). The development of a test of General Mental Abilities. Unpublished manuscript, Old Dominion University.

Kulik, J. A., & Brown, R.(1979). Frustration, attribution of blame, and aggression. Journal of Experimental Social Psychology, 15, 183-194.

Leary, M. R. (1990). Responses to social exclusion: Social anxiety, jealousy, loneliness, depression, and low self-esteem. Journal of Social and Clinical Psychology, 9, 221-229.

Leary, M.R., & Baumeister, R.F. (2000). The nature and function of self-esteem: Sociometer theory. In M. Zanna (Ed.), Advances in experimental social psychology (Vol. 32, pp. 1-62). San Diego, CA: Academic Press.

Leary, M. R., & Downs, D. L. (1995). Interpersonal functions of the self-esteem motive: The self-esteem system as a sociometer. In Kernis, M. (Ed.), Efficacy, agency, and self-esteem, pp. 123-144. New York: Plenum.

Leary, M. R., Kowalski, R. M., Smith, L., & Phillips, S. (2001). Teasing, rejection, and violence: Case studies of the school shootings. Manuscript submitted for publication.

Leary, M. R., Tambor, E. S., Terdal, S. K., & Downs, D. L. (1995). Self-esteem as an interpersonal monitor: The sociometer hypothesis. Journal of Personality and Social Psychology, 68, 518-530.

Leith, K. P., & Baumeister, R.F. (1996). Why do bad moods increase self-defeating behavior? Emotion, risk taking, and self-regulation. Journal of Personality and Social Psychology, 71, 1250-1267.

Lynch, J. J. (1979). The broken heart: The medical consequences of loneliness. New York: Basic Books.

Menninger, K. (1966). Man against himself. New York: Harcourt, Brace & World. (Original work published 1938).

Mize, J., & Ladd, G. W. (1988). Predicting preschoolers' peer behavior and status from their interpersonal strategies: A comparison of verbal and enactive responses to hypothetical social dilemmas. Developmental Psychology, 24, 782-788.

Moreland, R. L. (1987). The formation of small groups. In C. Hendrick (Ed.), Group processes: Review of personality and social psychology (Vol. 8, pp. 80-110). Newberry Park, CA: Sage.

Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. Psychological Bulletin, 113, 99-128.

Ohbuchi, K., Kameda, M., & Agarie, N. (1989). Apology as aggression control: Its role in mediating appraisal of and response to harm. Journal of Personality and Social Psychology, 56, 219-227.

O'Neal, E. C., & Taylor, S. L. (1989). Status of the provoker, opportunity to retaliate, and interest in video violence. Aggressive Behavior, 15, 171-180.

Parkhurst, J. T., & Asher, S. R. (1992). Peer rejection in middle school: Subgroup differences in behavior, loneliness, and interpersonal concerns. Developmental Psychology, 28, 231-241.

Pennebaker, J. W. (1989). Stream of consciousness and stress: Levels of thinking. In Uleman, J. S., & Bargh, J. A. (Eds.), Unintended thought. New York: The Guilford Press.

Pennebaker, J. W., Czajka, J. A., Cropanzano, R., & Richards, B. C. (1990). Levels of thinking. Personality and Social Psychology Bulletin, 16, 743-757.

Perry, L. C., Perry, D. G., & Weiss, R. J. (1986). Age differences in children's beliefs about whether altruism makes the actor feel good. Social Cognition, 4, 263-269.

Piers, G., & Singer, M. (1971). Shame and guilt: A psychoanalytic and cultural study. New York: Norton. (Original work published 1953)

Putnam, R. D. (2000). Bowling alone: The collapse and revival of American community. New York: Simon & Schuster.

Sampson, R. J., & Laub, J. H. (1993). Crime in the making: Pathways and turning points through life. Cambridge, MA: Harvard University Press.

Schonert-Reichl, K. A. (1999). Relations of peer acceptance, friendship adjustment, and social behavior to moral reasoning during early adolescence. Journal of Early Adolescence, 19, 249-279.

Steblay, N. M. (1987). Helping behavior in rural and urban environments: A meta-analysis. Psychological Bulletin, 102, 346-356.

Trout, D. L. (1980). The role of social isolation in suicide. Suicide and Life-Threatening Behavior, 10, 10-23.

Twenge, J. M., Baumeister, R. F., Tice, D. M., & Stucke, T. S. (2001). If you can't join them, beat them: Effects of social exclusion on aggressive behavior. Journal of Personality and Social Psychology, 81.

Twenge, J. M., & Campbell, W. K. (2001). "Isn't it fun to get the respect that we're going to deserve?": Narcissism, social rejection, and aggression. Under review at Personality and Social Psychology Bulletin.

Twenge, J. M., Ciarocco, N. J., & Baumeister, R. F. (2001). Help! I need somebody: Effects of social exclusion on prosocial behavior. Under review at the Journal of Personality and Social Psychology.

Twenge, J. M., Catanese, K., & Baumeister, R. F. (2001). If no one will ever love you ...: The effect of social exclusion on self-defeating behavior. Manuscript in preparation.

Walsh, A., Beyer, J. A., & Petee, T. A. (1987). Violent delinquency: An examination of psychopathic typologies. Journal of Genetic Psychology, 148, 385-392.

Wentzel, K. R., & Erdley, C. A. (1993). Strategies for making friends: Relations to social behavior and per acceptance in early adolescence. Developmental Psychology, 29, 819-826.

Wentzel, K. R., & McNamara, C. C. (1999). Interpersonal relationships, emotional distress, and prosocial behavior in middle school. Journal of Early Adolescence, 19, 114-125.

Williams, D. R., Takeuchi, D. T. & Adair, R. K. (1992). Martial status and psychiatric disorders among blacks and whites. Journal of Health and Social Behavior, 33, 140-157.

Williams, K. D., Cheung, C. K. T., & Choi, W. (2000). CyberOstracism: Effects of being ignored over the Internet. Journal of Personality and Social Psychology, 79, 748-762.

Williams, K. D., & Sommer, K. L. (1997). Social ostracism by one's coworkers: Does rejection lead to loafing or compensation? Personality and Social Psychology Bulletin, 23, 693-706.

Wyer, R. S., & Srull, T. K. (1986). Human cognition in its social context. Psychological Review, 93, 322-359.

Table 1:

Summary of results of laboratory studies of social exclusion

Project/dependent variable	Specific behaviors/traits
Aggression	Blasting unpleasant noise, negative job evaluation
Prosocial behavior	Donating money, volunteering time, helping experimenter, cooperating in game
Self-defeating behavior	Risky lottery choice, choice of unhealthy behaviors, procrastination
Cognitive performance	IQ test, GRE reading comprehension, GRE analytical reasoning
Individual differences	Narcissism and self-esteem