

Assessing the Directionality of Deindividuated Behavior: Effects of Deindividuation, Modeling, and Private Self-Consciousness on Aggressive and Prosocial Responses

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This study investigated the effects of deindividuation, modeling, and private self-consciousness on antisocial and prosocial responses. Groups of four participants ($N = 72$) were exposed to factorial combinations of situational cues (deindividuating vs. individuating) and modeling (prosocial vs. no model vs. antisocial) and subsequently were given the choice to behave either aggressively or altruistically toward another person. Subjects receiving deindividuating cues produced higher levels of aggression and dispensed greater sums of money compared with individuated participants. Subjects exposed to a prosocial model administered more money than did subjects exposed to the no-model or aggressive model. Although an expected main effect of models on aggression approached significance, a predicted Situational Cues $\times$ Model interaction did not. This investigation suggests that subjective deindividuation is a neutral condition. When antisocial environmental cues are present, deindividuated persons are likely to engage in aggressive actions, whereas prosocial cues influence deindividuated group members to behave altruistically. Although deindividuated group members are affected by stimuli such as models, they are not influenced to a greater degree than are individuated people. Finally, these results suggest that when the situational manipulations designed to reduce private self-awareness are salient and powerful, they may affect behavior more than do dispositional levels of private self-consciousness.

... the spontaneous and never quite predictable outcry of a crowd is unmistakable, and its effect enormous. It can express emotions of any kind:

which emotions often matters less than their strength and variety and the freedom of their sequence. (Canetti, 1963, p. 35)

In this description of the crowd, Canetti alluded to the potential volatility of collective behavior and to the range of emotional experiences and behavioral expressions of group members. What are the factors that contribute to the development and the tone of group activity?

Although still in its infancy, our understanding of the disinhibiting effect of such crowds has begun to take shape. This understanding has been facilitated by the investigation of the concept of deindividuation. Drawing on the earlier models proposed by Zimbardo (1970) and Diener (1980), Prentice-Dunn and Rogers (1983, 1989) explained deindividuation through the recognition of a public-private self-awareness distinction in crowd effects on people. This differential self-awareness theory notes that when an individual is a member of a crowd, changes occur within the person that may disinhibit actions through two alternative mechanisms. First, anonymity and diffused responsibility reduce individuals' accountability for acts by making the individuals less aware of the public aspects of themselves. That is, they are less concerned with others' evaluation of themselves and have decreased expectations of reprisals, censure, or embarrassment for any actions. The resultant behavior may be explained in terms of expectancy-value theory: People choose to act in a disinhibited manner because they simply do not expect to suffer negative consequences for their conduct. Second, group cohesiveness plus physiological arousal decrease awareness of private aspects of the self. The individual experiences an internal deindividuated state characterized by lowered private self-awareness, with concomitant altered thinking and altered emotional patterns (Prentice-Dunn & Rogers, 1982; Prentice-Dunn & Spivey, 1986). With a hampered capacity for self-regulation, the individual becomes more responsive to environmental cues for behavioral direction than to internal standards of appropriate conduct. (For more details concerning self-regulatory mechanisms and deindividuation, see Prentice-Dunn & Rogers, 1989.)

In sum, one category of collective behavior results from a group member's active calculations that his or her attacks on another person will not be subject to scrutiny and possible retaliation from victims and authority figures. On the other hand, a second category of uninhibited acts may result from decreased cognitive mediation of behavior that occurs with deindividuation.

To date, the effects of deindividuation have been investigated exclusively in terms of ensuing antinormative and aggressive responding (see reviews by Diener, 1980; Dipboye, 1977; Prentice-Dunn & Rogers, 1983). However, within the context of the differential self-awareness theory, the reduction in private self-awareness increases group members' responsiveness to environ-

mental cues. Depending on the particular configuration of such stimuli, the resultant behavior should range from "revelrous dancing to mob violence" (Prentice-Dunn & Rogers, 1989, p. 94). Thus, the primary focus of this study was to investigate a major untested aspect of differential self-awareness theory; that is, the role of deindividuation in producing prosocial actions. In addition, the relative propensity of deindividuated people to behave aggressively or prosocially was compared by giving subjects a choice of aggressive or prosocial responses.

DEINDIVIDUATION AND PROSOCIAL BEHAVIOR

Research investigating the relationship between self-awareness and prosocial behavior has focused primarily on the effects of increased self-awareness on helping behavior (Brockner, Altman, & Chalek, 1982; Gibbons & Wicklund, 1982; Mayer, Duval, Holtz, & Bowman, 1985). Gibbons and Wicklund determined that two crucial prerequisites must be present for increased self-focus to enhance prosocial behavior: (a) The environmental helping cues must be salient and legitimate, and (b) the person called upon to act altruistically must not come into the helping situation preoccupied with how he or she is being evaluated by others. Such a preoccupation would preclude thoughts about helping. Gibbons and Wicklund (1982) found that when the helping cues were made salient and public self-concern was reduced, the self-focused individuals behaved prosocially. Conversely, they demonstrated that when these two necessary conditions were not met in the highly self-focused individuals, the propensity toward behaving prosocially was minimized.

When the aforementioned prerequisite conditions are not met, it may be beneficial for individuals to have an extreme outward focus of attention, where their behavior will be governed by what the particular situation dictates (i.e., when a person has reduced private self-awareness, prosocial cues may promote prosocial behavior). Although previous experiments have demonstrated that a reduction in private self-awareness produces an increased responsiveness to antisocial environmental cues—which, in turn, results in heightened aggressive responding (Prentice-Dunn & Rogers, 1982; Prentice-Dunn & Spivey, 1986; Rogers & Prentice-Dunn, 1981)—no research thus far has manipulated deindividuation in terms of reduced private self-awareness and examined its effects on prosocial behavior. It would seem plausible that, as with antisocial behavior, an increased responsiveness to prosocial cues would enhance the level of prosocial responding.

DEINDIVIDUATION AND MODELING

Among the environmental stimuli that may strongly affect group members is the presence of a model (Bandura, 1986; Baron, 1977; Diener, Dineen,

Endresen, Beaman, & Fraser, 1975; Krebs, 1970; Prentice-Dunn & Rogers, 1980; Staub, 1974). Although no studies have directly investigated the effects of the current conceptualization of deindividuation and modeling on subsequent opportunities to behave either antisocially or prosocially, earlier deindividuation theories (e.g., Diener, 1980) have speculated that modeling might have a differential effect on deindividuated and individuated subjects. That is, deindividuated subjects would have an external attentional focus and would be more responsive to environmental cues (i.e., a prosocial model) than would the internally focused individuated subjects. Therefore, in this study, prosocial modeling cues were expected to have a greater impact on deindividuated subjects than on individuated ones; hence, there would be greater levels of prosocial responding by deindividuated subjects exposed to a prosocial model than individuated subjects exposed to a prosocial model. Similarly, an aggressive model was expected to increase further the difference in levels of aggressive responding between deindividuated and individuated subjects. These untested relationships, although more speculative than the relationship between deindividuating cues and type of responding, were another area of focus in this study.

PRIVATE SELF-CONSCIOUSNESS AND DEINDIVIDUATION

Prentice-Dunn and Rogers (1989) suggested that personality variables may affect the susceptibility of individuals to deindividuating influences. One such factor should be private self-consciousness, the dispositional tendency to focus one's attention on one's thoughts and feelings. It would seem likely that people who are low in private self-consciousness would be heavily affected by group contexts that foster deindividuation. However, exposure to very powerful situations may override the impact of personality constructs (cf. Mischel, Ebbesen, & Zeiss, 1973). Thus, an ancillary purpose of this study was to use a covariate analysis to assess the impact of private self-consciousness on the behavior of individuals exposed to deindividuating circumstances.

In sum, in a 2 (Deindividuating vs. Individuating Situational Cues) $\times$ 3 (Antisocial vs. Prosocial vs. No-Model) factorial design, it was predicted that there would be a main effect for a situational cues manipulations on aggression and on prosocial responding. Subjects exposed to deindividuating cues would exhibit higher levels of aggressive responding than subjects receiving individuating cues. A similar pattern was anticipated for prosocial behavior.

It was also hypothesized that there would be a situational cues by model interaction, in which subjects exposed to the antisocial model would behave

more aggressively than either the no-model control condition or the prosocial-model condition. This effect would be more extreme in the deindividuating cues conditions than in the individuating cues conditions, resulting in an ordinal interaction. A similar pattern was expected for prosocial behavior.

METHOD

Subjects

Seventy-two male students enrolled in introductory psychology courses participated in the experiment for extra course credit. Groups of subjects were randomly assigned to each of the experimental conditions, resulting in 12 subjects per condition. Four subjects' data were discarded due to their belief that no shock or money was actually delivered during the study. These self-reports were gathered on a postexperimental questionnaire that included items concerning hypothesis guessing and the plausibility of the experimental procedures. Other than the four just noted, no subjects expressed suspicion about the cover story, the procedures, or the role of the experimental assistants. Thus, the sample that was statistically analyzed contained two experimental conditions of 12 subjects each and four conditions of 11 subjects each.

Apparatus and Dependent Measures

The measure of aggression was the intensity of the electrical shocks, ranging from *low intensity* (1) to *high intensity* (10), delivered during 20 trials by each subject to an experimental assistant playing the role of naive participant. Prosocial behavior was assessed using the amount of money dispensed during 20 trials by each subject to the experimental assistant.

Both the shock apparatus and the monetary dispensing apparatus were modified Buss aggression machines (Buss, 1961). Each of the four shock aggression machines used in the study had 10 pushbutton switches that were depressed to deliver shocks of progressively increasing intensity from 1 to 10. One machine had two of the pushbuttons (Numbers 4 and 6) wired to deliver two sample shocks to the subjects during an early phase of the experiment. These were the only shocks actually delivered during the study.

As with the shock panels, the four monetary dispensing machines had 10 pushbutton switches ranging from \$0.25 to \$2.50 in increments of \$0.25, that ostensibly delivered money when pressed.

Procedure

Three weeks prior to any experimental manipulations, all potential subjects completed the Self-Consciousness Scale (SCS; Fenigstein, Scheier, & Buss, 1975). Only the 10 items assessing private self-consciousness were used in the covariate analysis.

Subjects arrived and were tested in groups of four. Three of the subjects were naive participants, and one was an experimental assistant (#1). Assistant #1's primary duty was to note any communication between other group members that may have contaminated the independence of aggressive or prosocial responses or self-report ratings. Fortunately, no communication of this type occurred. Upon completion of half of the total number of experimental sessions, Assistant #1 and a second experimental assistant (#2) switched roles. Subsequent statistical analysis revealed no significant main effect of assistant or any interactions with independent variables on the dependent measures.

The study was explained as a combination of two experiments, a variation of the cover story used by Prentice-Dunn and Rogers (1982). The naive participants signed up for a study entitled "Problem-Solving Processes." The purpose of this study was described as the rating of thought processes while people perform such tasks as solving anagrams to form names of rock bands, watching and evaluating a video game, and when appropriate, playing a "ball and spiral" game. The second experiment was a "Memory Study" for which another introductory psychology student (actually Assistant #2) had volunteered. The memory study was explained as an investigation of the role of distractions in the memory of details. Problem-solving participants were told that the memory subject was trying to remember various aspects of the video game as he played it (e.g., number of moves made, number of mistakes made, etc.), while being distracted by either the presentation of shock or the deliverance of money. Subjects were informed that on each trial they could choose to deliver shock or money. Further, it was explained that both studies involved the same video game, and that they could save the experimenter from having to recruit additional subjects if they would provide the distractions. The experimenter explained that the shocks would be delivered by a finger electrode and that, although they might be mildly painful, the effects were over quickly with no permanent damage. Also, the experimenter emphasized the safety of the shock apparatus. Additionally, it was explained that if money was chosen as the distraction, a total amount to be given to the memory subject would be displayed on a digital counter and that he would be required to write down the amount.

After an explanation of the dual purposes of the study, the problem-solving participants were shown the memory study room that contained the

shock apparatus, a television monitor, a video game control set, and a central processing unit that supposedly programmed the video game. Actually, the unit recorded and displayed the amount of money dispensed and the shock intensities delivered by the problem-solving subjects. Next, two sample shocks were given to each subject through the finger electrode. Self-reports from previous studies (Prentice-Dunn & Rogers, 1982; Prentice-Dunn & Spivey, 1986) described these shocks as "tingling" (Shock #4; .25 mA) and "biting" (Shock #6; .35 mA). The purpose of the sample shocks was twofold: (a) to convince the subjects that the shock equipment actually worked, and (b) to give the subjects an idea of the shock magnitudes that the equipment could deliver. Also at this time the experimenter discussed how money was displayed on the counter and how this served as a distraction.

After the discussion of the money display counter and the administration of the sample shocks, the problem-solving subjects were taken to the video task room, where their distraction duties were discussed and later performed. The four seats in the video task room were arranged facing a television monitor and a cabinet speaker. Shock panels and money dispensing panels were present on the tables in front of each seat. Partitions allowed subjects to see each others' faces, but blocked any view of the other participants' panels.

It was explained to the problem-solving subjects that they would be watching a video game as part of their problem-solving process experiment. They would view the video game as it was played by the memory subject. During the subjects' video task, a green signal light on their panels would appear occasionally, indicating that they must give a distraction (either shock or money) to the memory subject at that time. Each subject was then to select and press one of the 20 pushbutton switches available. The experimenter explained that the higher the level chosen, the stronger the shock administered, or the greater the amount of money dispensed (in increments of \$0.25). The shock or money received by the memory subject was alleged to be the average of the four individual selections on each trial by the 4 subjects.

Two important instructions were given to the subjects. First, they were told that, more than likely, the memory subject would not have previously played the particular video game and might make many mistakes. It was emphasized that it was the memory subject's performance on the postgame questionnaire that was of interest to the experimenter, rather than how well he played the game. Second, the subjects were informed that any of the 10 shock switches or any of the 10 money dispensing switches were sufficient for the purposes of the study. It was explained that through recent research the experimenter had discovered that the different intensities of shock or amounts of money dispensed all had an equally distracting effect, so that

the naive participants could choose any intensity of shock or amount of money they wished on each trial. It was made clear that use of the lowest possible intensity shock or lowest amount of money on every trial was sufficient to distract the memory subject and would fulfill the requirements of the experimenter. In addition, it was explained that any intensity of shock or amount of money greater than Switch #1 would only serve as additional pain or monetary gain to the memory subject.

After the distraction duties were explained, the subjects were taken to another room where, depending on the condition, they completed a word task (15 min) and ball-and-spiral game (10 min). These activities were components of the situational-cues manipulation. Upon completion of these tasks, the problem-solving subjects returned to the video task room. Prior to the subjects being seated, the experimenter informed the subjects that he wanted to conduct a brief check of the shock/money panels. At the time, depending on the condition, the model manipulation was introduced.

During the 20 min that the subjects were involved in the video activity, 20 distraction trials were administered. The interval between the presentation of any two green signal lights was initially chosen randomly, ranging from 5 to 20 sec, and was then held constant across all groups. Upon completion of the distraction trials, each subject completed a questionnaire designed to assess various aspects of subjective deindividuation (e.g., reduction in private self-awareness and increased altered experience).

Situational cues manipulations. These manipulations were those employed successfully in Prentice-Dunn and Spivey (1986). In the deindividuating cues condition, subjects were influenced to draw attentional focus away from themselves, thus reducing private self-awareness. This was achieved through a combination of verbal instructions, group cohesiveness tasks, arousal, and materials that maintained subject interest. Throughout the various phases of the study, subjects were given repeated instructions to focus their attention outward and not on themselves. Also, the focus of the study was continuously described as group problem-solving processes.

Previous findings suggested that anagram tasks serve to increase cohesiveness in small groups (Marshall & Heslin, 1975). The anagram activity was described as a word task. The experimenter explained that this was a group task and that the subjects were to work collectively to unscramble the letters of 25 anagrams that formed the names of popular rock music bands. The subjects were seated around a small table in a dimly lit room and—while solving anagrams—listened to loud rock music, which has been found to increase arousal (e.g., Rogers & Ketchen, 1979). Thus, the anagrams and music fostered group cohesiveness and increased arousal in order to reduce private self-awareness.

The ball-and-spiral game was also intended to draw attention away from

oneself through group cohesiveness and arousal. Subjects stood in a dimly lit room and each held one of four handles located at each corner of the square board, while listening to loud rock music. The subjects were informed that this was a group task and that they must work collectively to manipulate the ball up the spiral.

Subjects were also encouraged to interact during the video task as they watched and evaluated the video game but to not discuss their shock or memory amounts delivered. The video (actually a tape) was explained as the game was played by the memory subject. They were instructed to focus on the game and the group and not on themselves. Prior research has indicated that subjects' interest in stimulus materials may facilitate an outward focus of attention (Diener & Kasprzyk, 1978; Prentice-Dunn & Rogers, 1982). This was achieved through the use of the video game "Basketball" from Atari Inc. This game was taped in color, with exciting play throughout the game. Additionally, the experimenter played loud rock music during the video game.

In the individuating cues condition, subjects were influenced to focus attention inward, toward themselves, thus increasing private self-awareness. This was accomplished through a combination of verbal instructions, an individual task orientation, and materials that decreased subjects' interest. The experimenter informed the subjects throughout the experiment that the primary interest of the study was the individual and his unique reaction. The subjects were instructed to focus only on their own thoughts and feelings during the experiment. The subjects solved anagrams in a brightly lit room at individual desks with separate word lists and no music or communication. Because the ball-and-spiral game could not be played by any one individual, this task was omitted during the individuating cues condition.

As in the anagram task, subjects were tested in a brightly lit room with no communication or music during the video task. In order to decrease the subject's interest in the stimulus materials, the video game "Checkers" was employed. The presentation of this video game was equal in length to the video game in the deindividuating cues condition. The taped video game was limited to a black and red checkerboard background, and the game was played with less action and movement than the video game in the deindividuating cues condition.

Antisocial and prosocial modeling manipulations. Prior to the distraction trials being conducted, subjects were instructed to wait at the entrance of the video task room while the experimenter conducted a brief equipment check. The experimenter asked one of the problem-solving participants (actually Assistant #1) to press several of the switches on a panel while he checked the equipment. The subjects believed that the

experimenter would not be able to identify which buttons were actually pressed. The behavior of the assistant was the experimental manipulation of the independent variable. In the antisocial modeling condition, the experimental assistant pressed, in order, the five shock switches, 9, 10, 9, 9, 10. In the prosocial modeling condition, the experimental assistant pressed, in order, the five money dispensing switches, 9, 10, 9, 9, 10. Previous research has shown that five modeling trials were sufficient to influence subjects' subsequent behavioral responding (Prentice-Dunn & Rogers, 1980). In the no-model condition, no equipment check or modeling of behavior was performed. Upon completion of the video task instructions to the subjects, further manipulation of the independent variable involved Assistant #1 making one standardized comment about his deliverance of distractions. In the antisocial modeling condition, he remarked: "I'm going to give this guy '10s every time." In the prosocial modeling condition he made the comment: "I'm going to give this guy \$2.50 every time." Finally, in the no-model condition, no comment was made about the deliverance of distractions.

Ethical Considerations

Prior to the experimental session, all participants received a thorough explanation of the procedures used in the study. All subjects were told that they could withdraw their participation from the study at any time and still receive full bonus credit. The experimenter asked each participant if he had any questions about or objections to the use of electric shock. Also, before any testing began, each subject was asked to sign a consent form which reemphasized the points previously mentioned.

After the experimental session was over, each subject received a full debriefing based on Mills's (1976) recommendations for experiments employing deception. Upon completion of the debriefing session, subjects were given a short questionnaire in a stamped envelope to be completed anonymously at a later time and returned by mail. Questions included in the questionnaire addressed the use of deception in the study; this provided the subjects with the opportunity to express any objections or concerns. The last two items in the questionnaire asked, (a) "Should this experiment be allowed to continue?" and (b) "If you had it do over again, would you be willing to participate in a similar study?" In previous studies, 67% of these questionnaires were returned and 100% of the subjects answered "yes" to both of these questions (Prentice-Dunn & Rogers, 1984). In this study, there was a 61% return rate with 100% answering "yes" to the two questions.

RESULTS

Subjective Deindividuation

Twelve self-report items completed after the 20th distraction trial were summed—with reversed scoring, where appropriate—for each subject.

Individual items were in a 10-point Likert format; for example: "I've been aware of the way my mind was working (reversal)"; "I've been alert to changes in my mood (reversal)." "The emotions I've experienced have been somewhat different from those I normally feel." These items have been shown in previous research to tap aspects of the subjective experience of deindividuation (Prentice-Dunn & Rogers, 1982; Prentice-Dunn & Spivey, 1986). Due to the unanimity of prior results on the composition of the internal state and its mediational role in producing distributed behavior (Prentice-Dunn & Rogers, 1980; Prentice-Dunn & Spivey, 1986; Rogers & Prentice-Dunn, 1981), no factor analysis or path analysis was conducted. As expected, deindividuating cues subjects had higher sums ($M = 70.97$) than did the individuating cues subjects, ($M = 61.60$); $F(1, 65) = 11.84$, $p < .001$.

Independent Variables

Aggression sum and prosocial sum. To address the effects of the independent variables on aggression and prosocial behavior, a 2×3 (Situational Cues $\times$ Models) factorial multivariate analysis of variance (MANOVA) was conducted on the subjects' shock intensity sums and the sums of money dispensed for 20 trials. This analysis revealed significant main effects for both situational cues, Wilks's lambda = .796, $F(2, 59) = 7.53$, $p < .001$, and models, Wilks's lambda = .779, $F(4, 118) = 3.91$, $p < .005$. Contrary to expectations, the multivariate interaction effect was nonsignificant, Wilks's lambda = .927, $F(4, 118) = 1.13$, $p < .35$. Use of univariate analysis of variance (ANOVA) disclosed the corresponding main effects for situational cues on both shock intensity, $F(1, 66) = 13.06$, $p < .001$, and money dispensed, $F(1, 66) = 4.50$, $p < .04$. Thus, deindividuating cues subjects displayed more aggression and more prosocial behavior than the individuating cues subjects (M s for shock = 7.65 and 6.00, respectively, and M s for money = 7.20 and 6.37, respectively). Although the effect of modeling cues (prosocial vs. no model vs. antisocial) failed to reach significance for shock intensity, $F(2, 66) = 2.15$, $p < .13$ (M s = 6.31, 6.65, and 7.47, respectively), it did for money dispensed, $F(2, 66) = 3.13$, $p < .05$ (M s = 7.42, 6.22, and 6.78, respectively). A Duncan's multiple-range test ($p < .05$) indicated that subjects exposed to a prosocial model administered more money than did subjects exposed to the no-model or aggressive model.

Transformed score. In an effort to assess the subjects' overall type of responses, transformed scores were produced by obtaining the total number of shock intensity scores and the total number of money dispensed scores for each subject over 20 trials. Shock scores received a negative value, whereas money scores were expressed in positive integers. These two scores

were then added to yield a single score which represented both the overall type of response (shock vs. money) and the magnitude of the response. A subsequent 2×3 ANOVA on the subjects' transformed scores revealed significant main effects for both situational cues, $F(1, 67) = 5.51, p < .02$, and modeling cues, $F(2, 67) = 4.46, p < .02$. The univariate interaction effect was nonsignificant ($p > .95$). Concerning situational cues, both deindividuating and individuating cues conditions obtained overall transformed scores in the shock range (negative values), in which deindividuating cues subjects displayed more aggression than individuating cues subjects ($M_s = -42.15$ and -7.09 , respectively). A Duncan's multiple-range test ($p < .05$) indicated that the prosocial modeling led to more overall prosocial responding relative to the aggressive modeling condition ($M_s = +4.50$ and -50.68 , respectively).

Private Self-Consciousness

A 2×3 analysis of covariance (ANCOVA) was conducted using shock intensity and money-dispensed sums as criterion variables and each subject's sum to the Private Self-Consciousness subscale items as the covariate. Results indicated a significant main effect for situational cues on shock, $F(1, 60) = 13.24, p < .001$. No interaction effect or main effect for modeling on shock were observed ($p > .14$ and $p > .18$, respectively). Additionally, the ANCOVA revealed significant main effects for both situational cues, $F(1, 60) = 4.52, p < .04$, and modeling cues, $F(2, 60) = 3.35, p < .04$, on money. Thus, these findings indicated that when the influence of the private self-consciousness covariate was removed, the treatment effects remained.

DISCUSSION

Over 90 years have passed since LeBon's (1986) investigation of the factors that promote antisocial actions among group members. Since then, many researchers (see reviews by Diener, 1980; Dipboye, 1977; Prentice-Dunn & Rogers, 1983) have systematically analyzed the variables that contribute to collective aggression and have labeled these disinhibiting effects as deindividuation. Until this study, previous experiments examined exclusively the effects of deindividuation on subsequent opportunities for aggressive responding. This investigation offers evidence for the previously untested proposition that subjective deindividuation is a neutral condition, rendering group members susceptible to environmental influences. If these

environmental cues are antisocial, people are likely to engage in aggressive actions. Conversely, when prosocial cues are present and attended to, deindividuated persons are capable of behaving altruistically.

Effects of Situational Cues

As predicted, deindividuating cues subjects displayed significantly more aggression than the individuating cues subjects. This outcome supported previous findings (e.g., Prentice-Dunn & Rogers, 1982; Prentice-Dunn & Spivey, 1986) that the subjective state of deindividuation promotes disinhibition through an increased responsiveness to external cues. Carver and Scheier (1981) posited that individuals regulate their own behavior by comparing their present situation to previous behaviors or to a personal or social norm. After acting to decrease any perceived discrepancy between present behavior and the reference behavior, the two are compared once again. Prentice-Dunn and Rogers (1989) proposed that private self-awareness is crucial to the operation of such a negative feedback loop. Deindividuated persons no longer have sufficient private self-awareness to work the matching-to-reference process. The affected individuals still behave, but cease to regulate their conduct according to consciously considered norms or previous behavior. This is precisely why deindividuated persons are impulsive and respond with little foresight. They are "inextricably wrapped up in the cues of the moment" (Prentice-Dunn & Rogers, 1989, p. 95).

In addition to displaying more aggression, deindividuated participants demonstrated significantly more prosocial behavior than individuated subjects. Gibbons and Wicklund (1982) described two necessary conditions (salient helping cues and minimal public self-concern) for increased self-focus to promote altruism. In this experiment, the environmental helping cues (e.g., money-dispensing panels) were made salient to the participants. In addition, subjects did not meet the memory subject and they believed that their individual responses were not identifiable. Thus, the requisite conditions were met for increased private self-awareness to facilitate helping. Nevertheless, the deindividuated participants behaved more altruistically due to their lack of self-regulation and their subsequent attention to external cues suggesting prosocial actions.

Consistent with these findings, the use of transformed scores (the combination of shock and money sums into a single dependent measure) demonstrated that deindividuating cues subjects displayed more aggression than individuating cues subjects. Interestingly, the individuated participants' mean transformed score fell in the negative range (-7.09), reflecting a tendency to respond more aggressively than prosocially. Although this score was low (range was from $+200$ to -200), it suggests that when given

an equal opportunity to respond antisocially or prosocially, even individuated participants elected to behave more in the aggressive direction.

One possible explanation for the transformed score results is that deindividuated behavior is skewed toward the antisocial. Should this explanation be true, then deindividuation may produce prosocial actions; however, it may be relatively more likely to produce antisocial behavior. An alternative explanation involves the procedures used in this experiment. Not only did the subjects never develop a relationship with the memory subject, but they also were not accountable for their actions and they feared little retaliation from the potential recipient of the distractions. As a result, individuated persons felt little need to help another person they had not met and who was obviously in no need of immediate help by others. These factors, coupled with the awareness that their aggressive actions would go unpunished, may have led the individuated subjects to respond overall in an aggressive fashion.

Effects of Modeling Cues

Although modeling did have the predicted main effect on money, no main effect was obtained on shock, although the effect approached significance with the cell means in the appropriate direction. Using the transformed score, it is interesting to note that the prosocial modeling condition produced the only outcome in the prosocial range ($M = +4.50$). This indicated the importance of modeling in producing specific outcomes. In fact, it appears that modeling influences may be a necessary factor in producing prosocial responses among individuated persons. Concerning deindividuated individuals, it appears that modeling only has an attenuating effect on antisocial behavior. When given an equal opportunity to respond either aggressively or prosocially in the absence of any modeling cues, deindividuated subjects demonstrated a tendency to behave more antisocially. These results suggest that, in naturalistic settings, the introduction of a prosocial model may be the crucial factor in dampening the aggressive behavior (cf. Prentice-Dunn & Rogers, 1980, 1989).

Contrary to expectations, situational cues by modeling interaction effects were nonsignificant for both shock and money. All prior and present conceptualizations of the deindividuation construct have speculated that deindividuated people are hypersuggestible, although it should be noted that no theory has placed crucial emphasis on this proposition (Diener, 1980; Prentice-Dunn & Rogers, 1983; Zimbardo, 1970). Taken together, our results suggest that although deindividuated group members are affected by stimuli such as models, they are not influenced to a greater degree than are individuated people. Apparently, the ceasing of the matching-to-reference process (that we postulate to occur in deindividuated

individuals) results in attention to external stimuli, albeit, not in a qualitatively different manner than that in individuated people. It should be cautioned, however, that the absence of the interaction should be replicated prior to concluding that deindividuated and individuated people process incoming information similarly.

Effects of Private Self-Consciousness

Some researchers (e.g., Mischel et al., 1973) have purported that situational manipulations of self-awareness will eliminate the dispositional effects of self-consciousness when the manipulations are strong. In this study the manipulations of private self-awareness were designed to produce an extreme state of deindividuation as in Prentice-Dunn and Spivey (1986). In our study, the private self-consciousness variable appeared to have no significant effect on the subject's susceptibility to the experimental manipulations of private self-awareness and on their subsequent opportunities for behavioral responding. It should be cautioned, however, that the covariate analysis is only suggestive of the moderating role and does not represent a conclusive assessment of that influence.

The possibility that the situational manipulations of private self-awareness may have greater impact than dispositional levels of private self-attention, probably accounts for why seemingly normal individuals immersed in collective activity are capable of engaging in inappropriate and antisocial behaviors (cf. Diener, 1980; Mullen, 1986). These people likely have internalized values regarding appropriate conduct; however, when deindividuated, their ability to engage in self-directed attention and to subsequently act on those values is compromised.

The findings of recent deindividuation studies conducted as laboratory experiments are consistent with the self-reports of group members in naturalistic settings as well as with observers' accounts of actions in such settings (cf. Canetti, 1963; LeBon, 1896). Potentially valuable avenues for future laboratory research include the greater specification of the role of physiological arousal in producing deindividuation. In addition, investigation of the entire continuum of private self-awareness is warranted. For example, whereas our deindividuation and individuation manipulations represent two points on the continuum, a third point might be represented by an individual sitting alone without the presence of private self-awareness-inducing stimuli (e.g., a mirror). A fourth point might be represented by the individual sitting alone in front of the mirror.¹ Although our major interest in this study was individual behavior in a group context,

¹We thank an anonymous reviewer for this suggestion.

an examination of the entire continuum described above might yield intriguing information.

In conclusion, the deindividuation construct appears to be useful when attempting to understand why individuals engage in collective aggression. Furthermore, this construct's greatest utility may perhaps involve the role of deindividuation in producing prosocial actions. By systematically investigating the effects of deindividuation on interpersonal responding, methods may be suggested to reduce the occurrence of antisocial actions and promote the incidence of altruistic responding among group members.

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