

Effects of Deindividuation Variables on Stealing Among Halloween Trick-or-Treaters

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A naturalistic study was conducted on Halloween to assess the effects of three deindividuation variables on stealing by children. Concealed raters unobtrusively observed over 1,300 trick-or-treating children who were assigned to various conditions and given an opportunity to steal candy and money. The independent variables were anonymity versus nonanonymity, alone versus group, and groups with or without a child who was made responsible for the group actions. Significantly more stealing was observed under conditions of anonymity ($p < .001$) and in the presence of a group ($p < .001$). There was also an interaction effect between these variables. Altered responsibility affected the transgression rate only when both the leader and members were anonymous. The highest rates of stealing occurred among anonymous children in groups with altered responsibility.

What forces act on members of antisocial groups to transform socialized individuals into uninhibited persons? Festinger, Pepitone, and Newcomb (1952) postulated that when group members are not seen as individuals, a state of deindividuation may result, with a consequent lowering of restraints. Zimbardo (1969) described the deindividuated condition in detail and attempted a delineation of some of the antecedent situational conditions of the state (e.g., group presence and anonymity). Zimbardo also suggested a number of internal conditions that would heighten the state of deindividuation, such as autonomic arousal and a subjective feeling of diffused responsibility for group acts. The present study was designed to explore several hypothesized antecedents of deindividuation as they affect antisocial behavior. Anonymity, group presence, and altered responsibility were manipulated and their effects on anti-normative behavior were measured. Research (e.g., Zillman, 1971) has demonstrated fairly clearly that autonomic arousal serves to increase the incidence of uninhibited behavior,

so it was not directly manipulated in the present study.

Research on anonymity suggests that this variable may have its strongest effect when combined with group presence. Festinger et al. (1952) found that when identification of group members decreased, subjects were more likely to engage in behavior usually considered unacceptable, and Cannavale, Scarr, and Pepitone (1970) replicated the findings of Festinger et al. An interesting aspect of both the Festinger et al. and the Cannavale et al. findings was that only when groups were treated as the unit of analysis was there a significant relation between lack of restraint and individual identification of group members. Findings of Zimbardo (1969) also suggest that anonymity may be most deindividuating when it occurs in groups. In an aggression shock paradigm, he used females either alone or in groups, with half being either anonymous or nonanonymous. In the group experiment, anonymity produced increases in shock durations, but in the alone experiment, anonymity produced changes in the opposite direction. No direct comparison could be made between alone versus group aggression, however, since the two conditions were run in separate experiments. The findings of both Festinger et al. and Zimbardo

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make it appear that anonymity may combine with group presence in an interactive way rather than additively. The strong form of this proposition is that a person cannot become deindividuated when alone. An experimental test of this proposition was a major purpose of the present research.

There is little research bearing directly on the idea that group presence is an important variable in antisocial behavior. Bandura and Walters (1963) have shown that one aspect of group presence, the modeling effect, is capable of eliciting antisocial behavior. Wheeler (1966) has investigated a similar "contagion" effect. With regard to the deindividuation theory predictions, it would appear that group presence would decrease inhibitions by decreasing self-awareness, by changing a person's perceived degree of responsibility, or by providing impulsive models. A second purpose of the present research was to explore the effect of group presence on antisocial behavior, and the contribution of modeling to the group presence effects was simultaneously assessed. An important question was the degree to which modeling effects, which are known to be quite powerful, account for the disinhibition that may occur in groups.

Although lessened responsibility should disinhibit behavior according to deindividuation theory, little research work has been done on responsibility. An interesting question is how group behavior is affected when responsibility is assigned to one person in the group. The effects of assigning responsibility to one person may depend on other factors in the group—for example, anonymity.

In a situation where all persons can be identified, designating a person as responsible may *increase* inhibitions. This may occur for several reasons. Responsibility has been made salient in the situation, which may affect a person's conscience even if he is not the one who is outwardly responsible. One may not want to bring the responsible person trouble, which would be especially true in a group of friends. And where group members are known, a chain of responsibility can conceivably affect even the less responsible.

In an anonymous group, having a responsible person may serve exactly the opposite function. When even the responsible person

is anonymous and therefore cannot be apprehended, it becomes obvious that nobody can be held accountable for the group's behavior. Designation of a responsible leader may have quite different effects on group behavior, then, depending on other factors in the situation. In the present research, group responsibility was manipulated by assigning total responsibility for the group's action to a single child. It was hoped that initial data could be thereby collected on the effects of altered responsibility. In addition, the responsibility manipulation was crossed with anonymity to ascertain the interaction of these two variables.

In summary, the present research explored three antecedents of deindividuation: anonymity, group presence, and altered responsibility. Halloween trick-or-treaters came to various homes connected with the research and were given an opportunity to steal candy and money. The number of children in each condition stealing candy or money was the dependent measure of antisocial behavior.

METHOD

Subjects

Subjects were 1,352 children from Seattle, Washington, who arrived to trick-or-treat between 5:00 P.M. and 9:00 P.M. on Halloween at any of the 27 homes selected throughout the city for this study. In the interests of simplicity, a limited number of conditions were run at each home, but homes were randomly assigned to treatments.

Setting

The entrance area in each of the 27 homes was arranged in the same basic pattern. Inside the front door, facing the entrance was a low table approximately 5 feet (1.5 m) long. On one side of the table was a large bowl full of bite-sized candy bars individually wrapped in brightly colored tissue paper. About 2 feet (.6 m) from the candy bowl rested a money bowl filled with pennies and nickels. Both bowls were periodically replenished during the evening. Within full view of both bowls was a decorative backdrop with a peep hole that camouflaged an unobtrusive observer.

Procedure

A female experimenter greeted all children who came trick-or-treating, and an assistant served as the unobtrusive observer who recorded the data. Whenever a child or children would approach the home, the experimenter would greet the child(ren) amicably, acting surprised and commenting on their

costumes. The experimenter then told each child, "You (or each of you) may take *one* of the candies. I have to go back to my work in another room." If a child asked about the money or had any questions about what he was supposed to do, the experimenter repeated the instructions to take one candy. She then exited and made sure she was out of sight of the children. The observer recorded the number of children who entered the house each time, whether or not a parent was present in the room, and for each child how much candy he took and whether he took any money. When too many children appeared at one time (more than seven) or if a second group of children descended upon the house before the experimenter could leave the room, a condition designated *glut* was formed, in which the experimenter remained in the room until the children had taken their candy. A special condition also took place when the children's parents were present.

Anonymity manipulation. No attempt was made to identify any of the costumed children in the anonymous condition. Furthermore, the experimenter was not a member of the household, so she was not familiar with the neighborhood children and they could not recognize her. The nonanonymous condition was designed to reduce the anonymity created by the costumes by identifying each child. After the experimenter greeted the children and commented on their costumes, she would explicitly ask each child in the nonanonymous condition what his or her name was and where he or she lived. The experimenter carefully repeated each child's name and address to make it salient that she knew this information about each of them. She then continued with the rest of the basic procedure by telling each child to take one candy and excusing herself to work in another room.

Group versus alone. Children came to the homes either in groups or alone, and these naturally occurring groups or lone individuals were left intact during the research. Groups of seven or larger were placed into the *glut* condition for practical reasons. Anonymity and group presence were crossed in a 2×2 design.

Altered responsibility. At the altered responsibility homes, the responsibility of group members was altered by making only one child responsible for transgressions. After instructing each child to take only one candy, the experimenter assigned the smallest child to be responsible if any extra candy was taken. The smallest child was given responsibility because he or she could most easily be made the scapegoat by the others. He or she had the least power to influence the other children. Since we were interested in studying feelings of altered responsibility, not leadership behavior, it seemed most appropriate to assign responsibility to the child least likely to exert strong pressures on the group. It was predicted that making one child responsible would increase stealing among the others because implicitly it suggested that they were not responsible. After the responsibility manipulation the experimenter left

the room. When a child came alone, he or she was run in the anonymous or nonanonymous conditions, but no responsibility manipulation was performed. There were three variants of the altered responsibility condition:

1. In the first variant, all children remained anonymous. The experimenter pointed out the smallest child and designated him responsible but made no attempt to identify any of the children. It was predicted that stealing would be highest in this condition where children were both anonymous and felt lessened responsibility.

2. In the "leader" nonanonymous variant, the experimenter greeted the children cheerfully, but made no attempt to identify any of the children except for the smallest in stature. The experimenter asked the smallest child's name and address, and would then tell him or her, "[Name], I will hold you responsible if any extra candies are missing." All the other children remained anonymous. Since the anonymous leader could be apprehended, it was unknown whether this altered manipulation would increase or decrease stealing.

3. In the nonanonymous variant of the responsibility condition, all children were asked their names and addresses as in the standard nonanonymous condition. Furthermore, the experimenter called the smallest child by name and informed him that she would hold him or her responsible if any extra candies were missing. This condition was designed to see whether assigning responsibility to a single individual would disinhibit behavior even though the individual group members were identifiable.

RESULTS

The incidence of stealing was defined as the number of children in a given condition who transgressed the stated norm by taking extra candies, money, or both extra candy and money. Scoring in this way, each child could commit only one transgression. Of the 416 transgressions over all conditions, 65.4% were cases of extra candy being taken, 13.9% were cases where a child took only money, and the remaining 20.7% took both extra candy and money. Whenever a parent was present, the frequency of transgressions was very low (8.3%). The *glut* conditions also involved an adult presence, the experimenter's, and the incidence of transgression was 18.7%. Evidently the presence of an adult was sufficient to dramatically decrease the occurrence of transgressions. The rest of the analysis will pertain to the 1,039 subjects most relevant to the hypotheses. Subjects in the parent-present and *glut* conditions were excluded from these analyses. The number of extra candies taken

by each child was also recorded. Except for one condition with a small sample size, the range of the mean number of extra candies taken was from 1.6 to 2.3. It appeared that if a child transgressed by taking extra candy, he took the number of extra candies that his hand would hold.

The incidence of transgressions among conditions is displayed in Table 1. In the all anonymous/altered responsibility condition the highest incidence of transgression was observed, with 64 of the 80 subjects committing violations. The significance of the differences between conditions is shown in Table 2. As can be seen, although both anonymity and group presence seemed to produce effects, their interaction produced a stronger impact. Altered responsibility also interacted with anonymity in the effect it produced.

Group presence. A question arises as to whether the strong group effect can be entirely attributed to modeling. One approach to answering this question is to analyze the data for the first person in the groups, because no modeling influence on their behavior was possible. The transgression rates by first persons of groups shown in Table 1 reveals that the transgression rates for these children, uninfluenced by modeling, was higher than the comparable alone condition children. First children in anonymous groups stole significantly more frequently than anonymous alone youngsters, $\chi^2(1) = 15.8$, p

$< .001$. First children in nonanonymous groups transgressed significantly more often than nonanonymous alone children, $\chi^2(1) = 4.74$, $p < .05$. In addition, one can compute the probability that one may be exposed to an impulsive model based upon the base rate of transgression in the comparable alone group. By taking the imitation rate into account, one can predict the number of transgressors in each group due solely to modeling. This expected rate falls below the actual rate of transgression, once again suggesting that modeling was not solely responsible for the group transgression rate.

Modeling effects. The data also reveal that there was a strong modeling influence on group members. Table 3 shows the percentage of groups in which members transgressed after observing the behavior of the first child to approach the display table. The modeling effects were strong. The chi-square analysis of the occurrence of transgressions by group members, broken down by whether or not the first child who approached the bowls transgressed, yielded significant values ($p < .001$) in all conditions. This demonstrated that there was a significant direct relationship between the actions of the first child to approach the display table and the norm-related behaviors of the subsequent children in the group.

DISCUSSION

All three deindividuation input variables led to increases in antisocial behavior. As was postulated by Festinger, Pepitone, and Newcomb (1952) and by Zimbardo (1969), anonymity was found to be an antecedent of antisocial behavior. Also, the predicted interaction between group presence and anonymity was observed. For the alone conditions, anonymity increased the transgression rate by 14%, whereas in groups, anonymity increased transgression by about 36%. Although anonymity did seem to have a weak but non-significant effect on alone individuals, anonymity for group members produced a large effect. Anonymity by itself may release some antisocial behavior because it reduces fear of apprehension. But when anonymity occurs in a group, it may have additional effects, such as fostering deindividuation. Of course, this

TABLE 1
PERCENTAGE OF CHILDREN TRANSGRESSING

Condition	Total number of children	Percent transgressing
Nonanonymous		
Alone	40	7.5
Group	384	20.8
First child in group	(130)	23.1
Anonymous		
Alone	42	21.4
Group	297	57.2
First child in group	(104)	57.7
Altered Responsibility		
None anonymous	57	10.5
"Leader" only		
nonanonymous	139	27.3
All anonymous	80	80.0

latter statement is a hypothesis that demands further empirical work. In order to explore such a question, it would be helpful to have measures of deindividuation independent of the disinhibited behavior itself.

As had been predicted, subjects were more likely to violate standards if they were members of a group. The effect occurred both for anonymous and nonanonymous groups. The greater influence of group presence in the anonymous conditions (an increase of about 36% over the alone condition) than in the nonanonymous conditions (about a 13% difference) once again revealed the interactional nature of group presence and anonymity. Modeling or contagion effects were found across all conditions. In the great majority of cases (about 85%), the norm-related behavior of the first person who approached the bowls was matched by many of the other group members. But further analyses revealed that the effects of group presence were not all due to modeling. The behavior of the first person at the bowl, uninfluenced by modeling, reflected the influence of group presence. The data suggest a two-step process of transgression in groups. The leaders are strongly influenced by situational factors such as group presence and anonymity, and other group members in turn are strongly influenced by the leader's behavior. An interesting question is the mechanism by which the group influences the leader. Does this process occur because of the leader's self-awareness, feelings

TABLE 2
CHI-SQUARE COMPARISONS AMONG
TRANSGRESSION RATES

Condition	Comparison	χ^2	<i>p</i>
Group	A vs. B	4.4	<.05
	C vs. D	19.0	<.001
Anonymity	A vs. C	3.2	<i>ns</i>
	B vs. D	11.0	<.001
Responsibility	E vs. F	6.5	<.05
	E vs. G	64.3	<.001
	F vs. G	56.4	<.001

Note. *df* = 1 for all comparisons. Letters in comparisons refer to the following conditions: A = nonanonymous/alone, B = nonanonymous/group, C = anonymous/alone, D = anonymous/group, E = altered responsibility/none anonymous, F = altered responsibility/leader only nonanonymous, and G = altered responsibility/all anonymous.

TABLE 3
MODELING DATA FOR GROUPS

Type of group	Condition	
	Anonymous	Nonanonymous
Groups in which at least one other group member transgressed when first child did		
Percentage	83.3	66.7
Total no. of groups	60	30
Groups in which other group members did not transgress when first child did not		
Percentage	88.6	91.0
Total no. of groups	44	100

of responsibility, or impression management in front of the group?

It appeared that altered responsibility as manipulated in the study did not increase stealing in every case, and the data obtained were not predicted by deindividuation theory. The all anonymous/altered responsibility group did produce the highest frequency of stealing (80%), which is consonant with the theory. But the low rate of transgression in the none anonymous/altered responsibility group was not predicted by the theory. These two findings suggest that anonymity and responsibility may interact in the way suggested earlier. A possible approach to the problem is to determine whether responsibility produces effects by arousing fear of punishment or by activating one's conscience. These two possibilities each suggest a different type of interaction between anonymity and responsibility and should be studied further.

A possible factor in the effect of the altered responsibility manipulation (appointing a "leader") was that the groups were self-selected. Thus the appointed "leaders," given sole responsibility for extra candy and money taken, were likely to be friends or relatives of the other group members. Having an appointed leader who was not anonymous may have made salient the presumed negative consequences to a friend and thus increased inhibitions against violating a standard. As evidenced by the leader only nonanonymous data, being anonymous and thereby losing personal responsibility does not automatically release behavior if a friend is responsible. The impact of decreased responsibility on indi-

viduals was manifested only when the entire group was anonymous. The operation used to alter responsibility may have inhibited children by making salient the transgressive nature of taking more than one candy. This hypothesis seems reasonable but does not explain the high rate of transgression in the all anonymous/alter responsibility condition. Perhaps in that condition the manipulation served to make children aware that even the responsible child, because of his anonymity, could not be apprehended for misdeeds. The data support the suggestion that assigning responsibility decreases transgression in a group where members are identifiable, but only serves to increase transgression where all are anonymous.

Although the results of the present study support the deindividuation model of disinhibition, several of the main effects are hardly startling. But several of the findings were less predictable. It was found that anonymity and group presence interact in their effects, a prediction generated from past research but not previously tested. Another interesting finding was that group presence increased the transgressions of first children prior to an opportunity for a modeling influence. This finding suggests that leaders and followers may influence each other in a reciprocal way. The leaders in the study were influenced by the presence of followers (as well as by anonymity) and the leader's behavior in turn strongly affected the behavior of the group. The 80% transgression rate in the all anonymous/alter responsibility group reveals that large levels of transgression are released when these situational inputs interact. These findings do not shed light on whether the locus of control from which the deindividuated person is liberated is internal

(e.g., self-awareness) or external (e.g., social control), and this is an important research question.

Significant interactions between input variables were frequent in the present data. This raises the question of the interdependence of the deindividuation variables. For example, a loss of self-awareness may occur because of group presence and anonymity. But lessened self-awareness may in turn increase feelings of anonymity. Several theoretical questions are suggested that will require further research. How is susceptibility to modeling influenced by reduced self-awareness and lessened responsibility? Does deindividuation lead to reduced feelings of responsibility? The question of *how* anonymity and group presence influence deindividuation are of central theoretical importance, and in order to study this, independent measures of deindividuation will be needed.

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