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THE EFFECT OF GROUP SIZE AND DEPENDENCY ON NON-EMERGENCY HELPING BEHAVIOR

by

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ABSTRACT

This study examined the effect of two major variables: group size which had been investigated primarily in naturalistic emergency situations; and dependency, which had been studied by several researchers, especially Berkowitz, in laboratory situations. The variables sex of subjects and subjects' concern about the "experimenter's awareness" of their productivity also were examined in the non-emergency situation. One hundred and forty-four subjects, equally divided as to sex, were placed randomly in one of the twenty-four cells of a 3 X 2 X 2 X 2 factorial design. The dependent variable was the number of envelopes made by each subject on behalf of a supervisor who needed his help.

There were three different group sizes; 2-, 3-, and 6-person groups. Contrary to prediction, there was not a significant effect for group size, i.e., subjects did not produce more in the smaller sized group. The interaction between dependency and group size was also non-significant.

There were two levels of dependency in which the subjects were told that either 80 per cent (high) or 20 per cent (low) of their supervisor's evaluation for a bonus depended on their productivity. The results showed a significant main effect for dependency in which, contrary to the prediction, subjects worked harder under the low than under the high dependency condition.

In examining the effect of sex, it was found that male subjects produced more under the low dependency condition than under the high

dependency condition as predicted, but unexpectedly, female subjects worked the same amount in the high dependency condition as in the low dependency condition. It is plausible that each of these negative results were caused by insufficient arousal of the social responsibility norm. In other words, the subjects may have reacted to the pressure of the task, and formulated individual achievement goals, instead of feeling obliged to help their dependent supervisors.

As predicted there was no difference in productivity between subjects in the "same" or "other" experimenter conditions. This could be attributed to either the lack of differential manipulation of experimenter awareness or to the fact that the subjects were not influenced by what their experimenters thought of them in this experimental situation.

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CHAPTER I

INTRODUCTION

In the last ten years there has been increasing research on altruism. Altruism (or what has also been called helping behavior) is commonly defined as "behavior carried out to benefit another without anticipation of rewards from external sources" (Macaulay and Berkowitz, 1970, p. 3). Previously altruistic behavior had been studied only in children, e.g., Wright's early study (1942) of the degree to which children were generous with their toys. The more recent interest in adult altruism, however, appears to have been initiated by Berkowitz and Daniels' (1963) demonstration that individuals tended to help a peer whom they perceived as dependent upon them. Since then variables relevant to help-provoking situations have been examined and several theories advanced as to why one person helps another. Some of the more prominent theories that have emerged are Homans' (1961) distributive justice, Gouldner's (1960) theory of reciprocity, Lerner's (1965) theory of social justice, Berkowitz's (1963) norm of social responsibility, and Darley and Latane's theory of "diffusion of responsibility". A detailed review of these theories of altruism, and their supportive research, will be examined in this paper.

REVIEW OF THE LITERATURE

Altruism in Children

Before altruism was examined in adults, it was first studied in children. One early study (Wright, 1942) found that eight-year old children were more generous with their toys with strangers than with friends. Besides the personality variables of age (Handlon and Gross, 1959; Wright, 1942) and socioeconomic status (Berkowitz and Friedman, 1967; Berkowitz, 1968) helping behavior in children also appears to be affected by the need for social approval (Staub and Sherk, 1968), and by the observation of helping models (Rosenhan and White, 1967; Hartup and Coates, 1967). One interesting study (Bryan, 1970) found that children donated more money when they saw a model do so, but the model's exhortations that "one should give to the crippled children" (Bryan, 1970, p. 64) had no effect on their donation behavior. From this Bryan suggests that the "integration of deeds concerning helping norms is neither a property of, nor an expectation held by, the young child" (Bryan, 1970, p. 71).

Other experimenters have recently theorized about the reasons behind children's altruistic behavior. Several (Aronfreed, 1968; Midlarsky and Bryan, 1967) have suggested empathy as an important determinant. Aronfreed (1968, 1970), for example, believes that children must first experience an empathic state before they are capable of true helping behaviour. According to Aronfreed, empathy is conditioned in the child when there is "an initial temporal association between cues which transmit the affective experiences of others and

closely related events whose affective value is directly experienced by the child" (Aronfreed, 1970, p. 111). In performing an altruistic act the child experiences a reduction in his empathic distress, which is internally reinforcing. Since dispositional characteristics are easy to theorize about, but difficult to examine, most of the experimenters in the field of childhood altruism appear to stress behavior, and the situational variables that affect it, rather than dispositional states.

Although there have been numerous studies on altruistic behavior in children, sometimes under the label of sharing behavior, generosity, and moral behavior, only a few have been cited to illustrate the variables related to children's altruistic behavior that have been studied and the several explanations of the development of altruism in children that have been advanced. The study of altruism in children may be instructive regarding the acquisition of the motive, but the variables under which it is maintained in adults is of concern today and the focus of this paper.

Adult Altruism in the Laboratory and Field

Recent interest in altruism in adults appears to have been initiated by Berkowitz and Daniels (1963) when they studied the interaction between helping behavior and dependency. They hypothesized that people help others because of the social responsibility norm which prescribes that "people should help those who are dependent upon them" (Berkowitz and Connor, 1966, p. 664). Berkowitz, as well as other experimenters, examined the conditions under which subjects were most likely to help a dependent

peer. Others, however, have felt the inadequacy of existing laboratory situations in investigating help-giving as it occurs in real life. Darley and Latane, for example, decided to make the laboratory situation more realistic by having the subjects believe that a real emergency was taking place. In one of their experiments (Darley and Latane, 1968), the subjects overheard someone having an epileptic seizure. Of course, no epileptic seizure actually occurred, but in questioning the subjects after the experiment, they said that they had heard someone in desperate need of their help. Darley and Latane (1970) later completely abandoned the laboratory setting and examined help-giving in such naturalistic settings as subways and city sidewalks. Bryan and Test (1967) also favoured the naturalistic setting and looked at donation behavior in front of department stores, as did Hornstein (1970) who examined the reactions of people to finding a wallet on a busy city sidewalk.

Thus research on altruism has been conducted both in the laboratory and in naturalistic settings. Although the examination of altruistic behavior in a naturalistic setting, such as a busy subway station, allows the experimenter to look at the spontaneous reactions of the people on the scene, without being influenced by subtle pressures from the experimenter and other subjects, it does not permit any form of experimental control. A laboratory setting, on the other hand, while it lacks the realistic nature and spontaneity of responses, is characterized by its ability to control certain variables. Since this study required the careful manipulation of experimental variables, a laboratory situation was utilized.

Theories and Supportive Research

Many theories have been advanced as to why people help other people. Each theory has its own body of supportive research, although some theories have naturally provoked more research than others. Those theories that have initiated the most research are discussed below.

Distributive justice. One theory (Homans, 1961) contends that people are motivated by their desire for distributive justice, i.e., that people only want from an interaction what they feel they deserve from it. This desire for equity in human relationships has been more recently described by Adams (1965, p. 277) "as one in which a person's ratio of outcomes to inputs is equal to the other person's outcome-input ratio". Walster, Bersheid, and Walster (1970) expanded this equity formulation to define "harm doing", the opposite of altruistic behavior, as an act that "produces an inequitable relationship between the members" (p. 181). They then went on to list six major hypotheses, and various corollaries, to explain the factors that influence the harm doer after he has committed his harmful act. For example, one hypothesis states that "the harm doer will attempt to reduce his distress through the restoration of equity to his relationship with the victim" (Walster, Bersheid, and Walster, 1970, p. 183) by using such justifications as derogating the victim, denying responsibility for the act, and minimizing the victim's suffering. However, if the harm doer actually compensates his victim, he will do it only to the extent that it is equivalent to the outcome the harm doer has received. Thus Walster et al offer a theory of guilt-produced altruism which is based on Homans' distributive justice.

Stephenson and White (1968) have also used equity to describe altruistic behaviour. Unlike Walster, Bersheid, and Walster, they did not describe guilt, or the reactions to it, but instead looked at the reactions of ten-year old boys to manipulated injustice. They found that the boys in the absolutely deprived condition, the most inequitable position, cheated more than boys in the relatively deprived condition. As they state, "The rule of distributive justice receives strong support from these findings" (Stephenson and White, 1968, p. 468). Thus, Homans' (1961) theory of distributive justice has initiated research and received some experimental support.

Norm of reciprocity. Gouldner (1960) has proposed another theory of altruism based upon a "universal norm of reciprocity." Two kinds of reciprocity have been described. In one type the individual repays the other person for benefits he has received from that person. In the second, more general type of reciprocity "the individual provides rewards to another in relation to benefits he has received or anticipates, but the person to whom the rewards are given is not necessarily the same one who has benefited him in the past or who will maximize his outcomes in the future" (Berkowitz, 1968, p. 48). This universal norm of reciprocity does not contradict the previous theory, but rather tends to express altruism in the same economic terms. Although Gouldner (1960) proposed such a universal norm, various studies have shown that it is not universal, but is limited by certain conditions. For example, it was found (Goranson and Berkowitz, 1966) that reciprocity "is influenced by the degree to which the rewards given to the individual have been provided voluntarily" (Berkowitz, 1968, p. 48). The subjects worked hardest for someone who

had helped them voluntarily, particularly if it was the same person who had helped them previously. Social class differences also affect general reciprocity tendencies. It was found that American adolescent boys from entrepreneurial self-employed middle-class families were more affected by the reciprocity norm than were boys from either the bureaucratic (fathers receiving salaries) middle-class families or the lower-class families (Berkowitz and Friedman, 1967). Boys from the bureaucratic middle-class families were more responsibility-oriented than were the boys from the entrepreneurial middle-class homes. In studying the behavior of English adolescent boys (Berkowitz, 1968) it was found that it was the lower class boys, rather than the middle class boys, who were most concerned with reciprocity obligations. While the American working-class gave relatively little help, regardless of the assistance they had received, the British working class boys were "greatly affected by the level of help they had received earlier" (Berkowitz, 1968, p. 46). However, reciprocity considerations are particularly important in some cultures. In the Philippine culture, for example, favors must be repaid or the individual faces social rejection (Kaut, 1961). On the other hand, "reciprocity norms may not be particularly salient to the middle or upper class female college student in our culture" (Test and Bryan, 1961, p. 211). Although Test and Bryan did not determine the specific contributions of modeling and reciprocity in helping behavior, they realized the importance of controlling for "model effects when studying reciprocity" (1969, p. 211).

The reciprocity norm has also been interpreted in terms of equity principles (Wilke and Lanzetta, 1970). Rather than a general "prescription

to help others who have helped you" (Wilke and Lanzetta, 1970, p. 489), the reciprocity norm could be expressed in the stronger equity terms "to do exactly unto others as they have done unto you" (Wilke and Lanzetta, 1970, p. 489). The finding that reciprocated help was a "monotonic increasing function of the amount of prior help", was interpreted as being consistent with social exchange theories (Wilke and Lanzetta, 1970, p. 489).

Dispositional state theories. The essentially sociological theory of reciprocity may also be viewed as a psychological theory stressing the individual's internal dispositional state. According to Greenberg (1968) the individual repays, or reciprocates, a favor because he experiences a state of indebtedness, i.e. a "state of tension having motivational qualities" (Greenberg, 1968, p. 3). Not only has the variable affecting reciprocated help been studied, but reciprocity has also been examined in terms of an internal state of indebtedness.

Aronfreed (1970) also believes that the internal dispositional state of the individual who performs an altruistic act should be examined. However, he does not deal directly with reciprocity, but with altruism as a whole. He believes that an individual learns as a child to behave altruistically, because it is affectively reinforcing. "Even when an altruistic act may have a directly experienced aversive outcome for the actor, the value of its total set of outcomes can nevertheless be preferred to the value of the outcomes of another less altruistic alternative" (Aronfreed, 1970, p. 105). However, explanations of behavior in dispositional terms are difficult to prove or disprove. That is why more research has been done on theories that look at the behavioral act, rather than on theories that are concerned with dispositional states.

Altruism as social justice. Another theory of altruism maintains that "people want to believe they live in a just world where people get what they deserve" (Lerner, 1970, p. 208). Altruism is therefore "a response to the need to establish social justice" (Simmons and Lerner, 1968, p. 223). If someone is the victim of an injustice, this theory contends that he would be helped in order to maintain the helper's belief in a just world. In a series of experiments, Lerner and his colleagues examined the attitudes of people towards those who needed help. In one experiment (1965b), he found that observers of an innocent victim will try to help and compensate the victim but, if they cannot, they reject the victim as one who "deserves" his fate. Rejection of the victim was strongest when the victim was viewed as a martyr, that is, when the victim suffered for the sake of the other subjects (Lerner and Simmons, 1966). "The suffering of someone whose fate derives from altruistic motives is more threatening to the observer's belief in a just world than the suffering of less nobly motivated victims. The most comfortable way the observer can maintain the belief in a just world is by rejecting the victim" (Lerner, 1970, p. 214). In another experiment (Simmons and Lerner, 1968) subjects worked less hard for a supervisor who had been betrayed than for one who had been rewarded. According to this theory, the subjects persuaded themselves that the supervisor who had been betrayed was a "loser" and did not deserve their help.

Attention was also focused on situations where the subject was involved in the circumstances that let up to the victim's suffering. For example, Lerner and Matthews in 1967 studied the effect of attribution of responsibility on the subject's evaluation of the victim. The

subject and the victim were to pick slips of paper from a bowl, which assigned them to either a shock or a non-shock condition. When the victim chose first and subsequently suffered in the shock condition he was not devalued because he was considered responsible for his own fate. However, when the subject chose first and subsequently placed the victim in the shock condition, he devalued the victim, apparently to reduce his own sense of guilt at being responsible for the victim's suffering. Lerner (1968b) found that if the subjects can even "blame" the experimenter for the victim's suffering, instead of blaming themselves, they have no need to devalue the victim. By compensating an innocent victim if they can, by devaluing an innocent victim when they cannot help him, and by assigning the responsibility for the victim's fate to the victim, the subjects maintain their belief in a "just world" where people deserve their fate.

Helping behavior as power. Another theory of altruism accounts for the power aspect of helping behavior. This theory maintains that the dependent person, that is, the person who needs help, has power over the potential help-giver because of the social responsibility norm that demands that an individual help a person who is dependent upon him. Males appear to be more aware of the power that a dependent person holds over them than are females. This was indicated by Schopler and Bateson (1965) when they found that females helped their dependent partners more when they were more dependent upon them, while males helped their dependent peers less when they were more dependent upon them. They hypothesized that males viewed the increased dependence of another male as a threat

to their status and reacted by helping the more dependent peer less than they helped the peer who was less dependent upon them. Females, on the other hand, presumably tended not to be as competitively oriented as the male subjects and responded to a greater need for help by giving more help.

To examine this power aspect of the dependent subject in a different light, several experimenters looked at the conditions under which a helper is reciprocated for the help he has already given. The helper is now dependent on the individual he once helped, but he still has power over him in the sense that people should help those who are dependent upon them (social responsibility norm). It was found that a person who had been helped was more likely to reciprocate the help when he believed that the person helped because he sincerely wanted to, and not because of external rewards (Schopler, 1970). The potential help-giver will be even more inclined to help if, besides seeing his previous helper's motives as being truly altruistic, he sees his own rewards as likely to increase. For example, a subject helped another more when the recipient of his help possessed valuable resources (Pruitt, 1968) and when his own costs of helping were low (Schopler and Bateson, 1965). By taking resources and costs into consideration, the potential help-giver tried to make sure that he maximized his rewards. But other factors also influenced the potential help-giver's decision to help. He did not help on strictly economic terms. For example, he was more likely to help when he liked the recipient of his action (Daniels and Berkowitz, 1963), and when he perceived that the other person needed help because of external environmental factors, rather than internal personality factors (Schopler and

Matthews, 1965). These studies examined the power aspect of altruism, the power that the person who needs help has over the other person, by virtue of the social responsibility norm. Although an individual's decision to help a dependent peer is influenced by economic factors such as rewards and costs, it is also affected by such factors as liking, and the reasons the other person needs help.

Effects of the presence of others. Darley and Latane (1968) have examined yet another theory of altruistic behavior. In a series of experiments they found that the presence of others, either seen or believed to be present, increased the subjects' reluctance to intervene in the situation. This effect they attributed to a "diffusion of responsibility", since the more people present, the less responsible the individual subject feels and the less likely he is to help. They suggest "that situational factors, expecially factors involving the immediate social environment, may be of greater importance in determining an individual's reaction to an emergency than such vague cultural or personality concepts as apathy or alienation due to urbanization" (Latane and Darley, 1970, p. 26).

Darley and Latane (1970) also examined the conditions under which donations, physical assistance, and information were given under non-emergency situations in the city. They found that females were more likely to receive help than males; that bold requests were more likely to be fulfilled than shy requests; that more help was given when the subjects were familiar with the location; and that wrong information was corrected more often if the other person was not physically threatening. Bystanders were more likely to join activities if the participants

reacted enthusiastically (Darley and Latane, 1970). On the basis of these studies they argue that "a person's helping behavior is too complexly determined by situational factors to be accounted for by norms" (Darley and Latane, 1970, p. 99).

Other experimenters have also concerned themselves with the presence of other subjects but they have examined this variable in a slightly different light. Bryan and Test (1967), for example, looked at the effects of models on helping behavior. They found that the presence of a generous model significantly increased donations to the Salvation Army, and that the effect of observing a motorist help another motorist was also to increase helping behavior. More people also signed petitions after observing a model (Blake, Mouton, and Hain, 1956; Helson, Mouton, and Blake, 1958), and more people volunteered for an experiment after seeing a model volunteer (Rosenbaum and Blake, 1955; Rosenbaum, 1956).

Not only the model's altruistic actions but also his motives for helping determines whether or not the subject will emulate him. Hornstein, Fisch, and Holmes (1968) studied this by depositing an envelope, containing a wallet, on the sidewalk. Wrapped around the wallet was a letter which led the subject to believe that the wallet had been lost twice, once by its original owner and once by its finder. The letter expressed the finder's feelings - either neutral, positive (pleasure at being able to help) or negative (annoyance) - at finding the wallet. The finder was either a similar model (well written grammatical note) or a dissimilar model (ungrammatical note such as would be written by a foreigner). It was found that "a letter from a similar model reporting positive or no experience produced more returns than a letter reporting

negative experiences, whereas the experience (positive, negative, or neutral) reported by a dissimilar model had no effect on the return rate" (Hornstein, 1970, p. 35). This supports what Schopler (1970) also found, that subjects are more likely to help if they believe that the person who first helped them was acting altruistically. If the model willingly helps, and expresses a positive attitude towards the cause he is supporting, more people will also donate to the charity. But, although positive models lead to more donations than do negative models, both types of models seem to goad people into action. "It seemed to us as we watched that most people would not stop at the table unless there was already someone there. People seemed to avoid solo action" (Macaulay, 1970, p. 59).

Social responsibility norm. There is one important theory that has not yet been discussed in detail - the norm of social responsibility. This norm, as first postulated by Berkowitz and Daniels (1963), prescribes that people should assume responsibility for those who are dependent upon them for help. However, "although the social responsibility norm appears to exist, it does not mean that everyone will adhere to it or, for that matter, that any one person will always behave in a consistent fashion with regard to this moral standard. Even when they have learned this ideal, people will conform to it only if they are aware of the moral rule on that occasion and are motivated to adhere to it" (Berkowitz, 1969, p. 284).

Certain factors seem to encourage social responsibility. For example, if a person is a member of the bureaucratic middle-class he is more likely

to help a dependent peer than if he is a member of the working class (Berkowitz, 1968). An individual's recent past experiences also influence his willingness to adhere to the social responsibility norm. If he has experienced prior success (Berkowitz and Connor, 1966), or if he has been helped previously (Berkowitz and Daniels, 1964), especially if the help was given voluntarily (Goranson and Berkowitz, 1966), he is more likely to help his dependent peer. Observing a helping model also increases helping behavior, probably because the norm is made more salient (Berkowitz and Daniels, 1964; Bryan and Test, 1967).

The individual's relationship with the person who needs help influences his willingness to help. The more the individual likes his dependent peer, the greater the amount of work he will do for him (Daniels and Berkowitz, 1963). Sex also plays a role in helping behavior. Berkowitz and Daniels (1963, 1964; Daniels and Berkowitz, 1963) have found that both males and females work for a dependent peer, but in at least one study this effect has only been found with females (Schopler and Bateson, 1965). This discrepancy was explained on the basis of methodological differences, that "help-giving may have been more legitimate, proper or even required" in the Berkowitz experiment (Berkowitz, 1969, p. 285).

How the situation is perceived also determines helping behavior. Schopler and Matthews (1965) found that subjects gave more help to a person who needed help because of factors beyond his control, than to a person who needed help because of his own inadequacies, presumably because the latter case of dependency was considered illegitimate. But if the subjects had a choice about whether or not to help a dependent

peer who was dependent because of his own shortcomings, they responded by helping (Horowitz, 1968). Subjects are also influenced by personal concerns. The higher the cost of helping (Schopler and Bateson, 1965) and the more self-concerned they are (Berkowitz, 1970), the less willing they will be to adhere to the social responsibility norm.

Even the relationship of the experimental situation to helping behavior has been studied. Some variables, such as the sex of the subject and the sex of the experimenter, have had no effect on helping behavior (Berkowitz, Klanderman, and Harris, 1964). The subjects in this latter experiment also did not help their peers more if they believed that the experimenter would soon learn of their productivity. This variable, which has been labelled "experimenter awareness" appears to have no effect on helping behavior. Even when individuals have learned the social responsibility norm, their past experiences, their relationship to the person who needs help, their perception of the situation, and the degree of their self-concern, all determine whether or not they will adhere to the norm.

Statement of the Problem

The present study was designed to examine the effect of several variables in a helping situation. It was primarily concerned with the effect of the variable of group size on helping behavior in the laboratory. Although group size was found to effect helping behavior in real-life situations (Darley and Latane, 1968), its role in determining helping behavior in a laboratory task, such as that utilized by Berkowitz *et al* (Berkowitz and Daniels, 1963; Berkowitz, Klanderman and Harris, 1964) has not been demonstrated.

In emergency situations Darley and Latane (1968) found that as the number of bystanders increased helping behavior decreased, presumably because of a "diffusion of responsibility". With more people present each person felt less responsible for the individual in trouble, and less inclined to help. In the Berkowitz laboratory situation, there also exists a person who is dependent upon others for help. Increasing the number of persons on whom this individual is dependent for help may also lead to a diffusion of responsibility and a subsequent mean decrease in helping behavior. In the present study, as in Berkowitz's, subjects are told that they are going to take part in a test of supervisory ability. In reality, however, it is the amount of help they give their dependent peer that is examined. Help-giving is measured by the amount of work (number of envelopes made) subjects produce for a supervisor whose evaluation for a bonus depends on their output.

To vary group size the subject was led to believe that there were either 2 or 5 other persons helping, or that the supervisor was totally dependent upon their output alone. Thus it was hypothesized that the 2-person group (the supervisor plus the worker) would have a greater mean output than the 3-person group (the supervisor plus 2 workers), which would have a greater mean output than the 6-person group (the supervisor plus 5 workers).

Since the Berkowitz laboratory procedures were employed, it became possible to test the replicability of his findings concerning levels of dependency. According to Berkowitz, the social responsibility norm prescribes that people should help those who are dependent upon them for help and the more dependent the person the greater the help. He has

demonstrated this effect in previous studies (Berkowitz and Daniels, 1963; Berkowitz and Daniels, 1964; Berkowitz and Connor, 1966; Daniels and Berkowitz, 1963). Thus, it was hypothesized that in this study there would be a significant main effect for dependency, with more help being given under the high dependency condition than under the low dependency condition.

Several other relevant variables were also examined in this study. Since the findings on the effects of sex have been inconsistent, this variable was studied. Whereas Schopler (Schopler, 1967; Schopler and Bateson, 1965) found increasing helping behavior with increasing dependency with only female subjects, in contrast, Berkowitz (Berkowitz and Daniels, 1963, 1964; Daniels and Berkowitz, 1963) found the same to be true with both male and female subjects. Anticipating that the experimental situation itself was largely responsible for the dissimilar results, the Berkowitz situation in this present study was modified to a procedure similar to Schopler and Bateson's (1965). This was done by increasing the dependency of the supervisor in the high dependency condition, and by determining the supposed choice of the supervisor by chance alone so that the male subjects would feel their status threatened as their previously equal-status partners increased demands on them. With these procedural modifications, it was hypothesized that male subjects would help a less dependent peer more than a more dependent peer, while female subjects would help a more dependent peer more than an independent peer.

Finally, although Berkowitz, Klanderman and Harris (1964) did not find the "experimenter's awareness" of the subjects' productivity to

influence results, a further replication of their observations would be convincing. It would certainly be desirable to demonstrate experimentally that subjects work harder for their supervisor, and not to impress the experimenter. To ensure against this latter possibility, two different conditions of experimenter awareness were employed. If the subjects performed differently under the two conditions then it could be said that experimenter awareness was a determinant of their behavior. If the subjects did not perform differently, then the results were not affected by this variable. It was predicted that the latter situation would occur.

In summary, it was predicted that:

1) subjects who perceived they were working in small groups would have a greater mean output than subjects who perceived they were working in large groups, i.e., the 2-person group would produce more than the 3-person group, which would produce more than the 6-person group;

2) high dependency subjects would produce more work than low dependency subjects;

3) there would be sex differences in helping behavior, i.e., that female subjects would work more to help a dependent peer while male subjects would work more to help a less dependent peer; and,

4) subjects would work to help their peers and not to impress their experimenter, i.e. that there would be no difference between the subjects tested by the same or another experimenter.

CHAPTER II

METHOD

Subjects

The subjects were 72 male and 72 female students enrolled in the Introductory Psychology course in the 1969 summer session at the University of Manitoba who volunteered for this experiment as part of the experiment participation requirement of the course. They were specifically requested not to sign up at the same time as someone they knew so that the variable "liking" could be kept constant over all conditions. Three subjects were not used because they indicated that they knew each other when questioned by the experimenter.

Experimental Design

A 3 X 2 X 2 X 2 factorial design was employed with three different sized groups (2-, 3- and 6-person groups); two levels of dependency (high and low dependency); two levels of sex (male and female subjects); and two types of experimenters (same and other experimenter). There were six subjects in each of the twenty-four cells of the design.

To minimize subject selection bias the subjects were assigned to the different conditions on a "first come, first served" basis. For example, the subjects who signed up first were placed in the first cell of the design, the second group in the second cell, and the last subjects were assigned to the last cell.

Procedure

The experiment was conducted in a research trailer consisting of

eight rooms, four on each side, connected by a long hallway. Each subject worked independently in a separate room. In the 6-person group, six rooms were used with the waiting room doubling as a research room because two of the other rooms were not available for this experiment.

As soon as the subject entered the trailer a sign directed him to the waiting room where he was told to wait until the other subjects arrived. All subjects were ostensibly in either a 2-, 3- or 6-person group. When all the subjects in the group had arrived, they were read the instructions as presented in Appendix A. Basically, the subjects were told that the purpose of the experiment was to examine a test of supervisory ability. To make the situation as real as possible, a supervisor, one or more workers, and a product produced by the workers, were required. The supervisor's job was to write instructions on how to construct paper envelopes, and the worker's job was to produce the envelopes from the instructions. The subjects in the 2-person group were informed that one of them would be the supervisor and that the other would be the worker. In the 3-person group, the subjects were told that one of them would be the supervisor and that two of them would be the workers, while in the 6-person group they were informed that one of them would be the supervisor and that the other five would be the workers. Their position was to be determined by the room number they drew from a hat, which indicated the room in which they were to work. The experimenter told them that she had already arbitrarily decided that the person drawing a certain room number would be the supervisor and that the appropriate instructions would be in their work rooms. In this way the subjects were informed that the choice of one of them as

supervisor was due to chance and had nothing to do with their personal characteristics. In fact, however, when the subjects got to their rooms, they all found this message on their desks:

> "You are a worker. The supervisor will soon be writing out instructions on how to make paper envelopes. This will take your supervisor approximately 5 to 10 minutes. While you are waiting, please feel free to browse through the magazines on the table, but stay in your room until the experimenter arrives. When the instructions are completed the experimenter will bring them to you. Further instructions will inform you how you are to proceed."

All subjects, therefore, saw themselves as workers. Each subject worked independently of the others, in separate rooms of the trailer.

After approximately seven minutes, during which time the subjects were led to believe that their supervisor was writing out envelope-making instructions, the experimenter brought in hand-written instructions (Appendix A). These instructions were placed face down in front of the subject, who was told not to look at them until told to do so. When all the subjects in the group received the envelope-making instructions, a tape recorder in the hallway was turned on. Although the doors to each room were closed, each door had a screened window through which every subject in his own room could hear the taped instructions. This set of taped practice-period instructions is presented in Appendix A. Basically, the subjects were told to read the supervisor's instructions and then, when told to do so, to begin making paper envelopes. It was stressed that the envelopes were not to be mass-produced but made one at a time, and that the quantity of the envelopes was much more important than the quality of the envelopes, although poorly made envelopes would not count. The tape informed the subjects that their practice envelopes were to be

discarded in the box on the floor. In reality, these envelopes were very important for they provided a baseline measure of each subject's ability to make envelopes. After each session these practice envelopes were carefully counted and removed from the room.

After the subjects had constructed practice envelopes for five minutes, the tape recorder told them to stop making envelopes. The experimenter then checked if each subject had carried out the instructions and also gave him a xeroxed set of further instructions (see Appendix A). These instructions varied according to the particular treatment-combination to which the subject belonged: the high or low dependency condition, the 2-, 3- or 6-person group, and the same or other experimenter condition. The subjects were given their instruction sheets face down and were told not to turn them over until told to do so. When all the subjects had received their instruction sheets, the experimenter again turned on the tape recorder in the hallway. The tape then told them to read the instructions quietly to themselves while listening to the same instructions from the tape recorder.

Through these instructions they were informed that their supervisor was eligible to win a bonus in the form of a five dollar gift certificate. In the high dependency condition the subjects were told that 80 per cent of their supervisor's evaluation for the five dollar bonus depended on the number of envelopes that they, the workers, made. However, the subjects in the low dependency condition were informed that only 20 per cent of their supervisor's evaluation depended on their productivity as workers, while 80 per cent depended on the quality of his instructions. In the 2-person group, the subjects were told that the supervisor's evaluation

(either 80 per cent in the high dependency condition or 20 per cent in the low dependency condition) depended on the number of envelopes "made by you, the worker". In the 3-person group, the supervisor's evaluation depended on the number of envelopes made "by you and the other worker", while the supervisor's evaluation depended on the number of envelopes made "by you and the other four workers" in the 6-person group. Therefore, the only difference in the instructions to the subjects in the 2-, 3- and 6-person groups was in the stress laid on the number of other workers being available to help the supervisor.

The instruction sheet and the tape also informed the subjects that the rest of the experiment would be carried out by the same or another experimenter. This variable was manipulated to determine if the subjects worked for the experimenter's good opinion of them, or to help their supervisor win the bonus. In the same-experimenter condition, the same experimenter would be aware of the number of envelopes they had made, while in the other-experimenter condition, the primary experimenter would not learn of their productivity.

In the same-experimenter condition, the subjects heard that the same experimenter who had been handling the experiment would also collect the envelopes that they had made. Only at the end of the summer school term would she count the number of envelopes made by each worker for, as the tape said, "By having the envelopes counted only at the end of the summer school term, we hope to keep this experiment as free from bias as possible." However, in the other-experimenter condition, another experimenter would conduct the rest of the experiment and pick up the envelopes made by each worker so that the original experimenter could objectively score the

supervisor's envelope-making instructions.

After the subjects heard these taped instructions, the experimenter went to each room to see if each subject understood what he was to do. Then the experimenter started the tape recorder again. The subjects were informed when their ten-minute work period started and ended. At the end of the ten-minute work period, the subjects put the envelopes they had made into a large brown envelope, and sealed it.

Depending on whether the subject was in the same-experimenter condition or in the other-experimenter condition, the same experimenter or another experimenter respectively went into each room, took the brown envelopes, and gave the subjects several questionnaires to fill out. The first questionnaire asked eleven questions designed to determine whether or not the experimental conditions had been manipulated successfully (Appendix B). The 29 item James-Phares Internal-External Scale (Gore and Rotter, 1963) was also given to the subjects. There was no title on this scale. The instructions merely asked them to select statement a or b, the statement with which they more strongly agreed.

When the subjects handed in their completed questionnaires, they were asked not to discuss the experiment with any other student taking the Introductory Psychology course. They were told that they would receive more information about the experiment at the end of the summer school term. The post-experimental information sheet which was given out to all subjects at the end of the term is presented in Appendix C.

CHAPTER III

RESULTS

The dependent variable in this study was the subject's productivity, i.e., the number of envelopes each subject made in the ten-minute work period minus twice the number he made in the five-minute practice (baseline) period. This dependent variable was obtained under three levels of grouping (2-, 3- and 6-person groups); two levels of dependency (high and low); two levels of sex (male and female); and two conditions of experimenters (same and other). The productivity scores were analyzed in a 3 X 2 X 2 X 2 factorial design, the summary of which is presented in Table 1. The mean subject productivity scores for the first three conditions are presented in Table 2. To simplify matters, the experimenter awareness condition is not presented as a fourth variable in the table. In addition to these data, the effectiveness of the experimental manipulations was tested by a post-experimental questionnaire.

Size of Groups

There were four hypotheses tested in this study. First, it was hypothesized that subjects would produce more for their supervisor the smaller the size of the group they perceived they were working with. In other words, it was expected that the previous findings of Darley and Latane (1968) in emergency helping situations would apply to the laboratory task. Such was not the case however, as the main effect for group size (Table 1) was not significant ($F = 1.80$; $df = 2, 120$; $p < .20$).

TABLE 1

Summary of the Analysis of Variance for Ss' Productivity Scores (Work - 2 Base)

Source	DF	MS	F
Dependency (D)	1	47.8402	4.89*
Experimenter (E)	1	19.5069	1.99
D X E	1	31.1736	3.19
Groups (G)	2	17.6319	1.80
D X G	2	23.6736	2.42
E X G	2	2.2569	.23
D X E X G	2	.6319	.06
Sex (S)	1	24.1735	2.47
D X S	1	39.0626	3.99*
E X S	1	8.5069	.87
D X E X S	1	.1735	.02
G X S	2	5.0468	.52
D X G X S	2	5.1457	.53
E X G X S	2	19.9234	2.04
D X E X G X S	2	4.7986	.49
Within Cells	120	9.7819	
Total	143		

* $p < .05$

TABLE 2

Mean Subject Productivity Scores
by Sex, Dependency, and Group Size

		2-person group	3-person group	6-person group	Totals
Females	High Dependency	3.00	5.67	3.67	4.11
	Low Dependency	4.00	4.50	4.17	4.23
	Female Totals	3.50	5.09	3.92	4.17
	Grand Totals	3.13	4.34	3.82	3.76

		2-person group	3-person group	6-person group	Totals
Males	High Dependency	1.67	3.42	1.67	2.25
	Low Dependency	3.83	3.75	5.75	4.44
	Male Totals	2.75	3.59	3.71	3.35
	Grand Totals	3.13	4.34	3.82	3.76

Indeed, contrary to prediction, subjects in the 3-person groups tended to produce more than subjects in the 2- and 6-person groups. The mean differences between these sets of groups, however, were not significant.

Although it was not predicted, it was certainly conceivable that group size could interact with dependency and this interaction should be examined. As revealed in Table 1, however, this interaction was not significant ($F = 2.42$; $df = 2, 120$; $p < .10$). Furthermore, examination of the means involved in this interaction indicated that only under the high dependency condition did subjects in the 3-person groups ($\bar{X} = 4.54$) work significantly harder than subjects in the 2-person groups ($\bar{X} = 2.33$) and 6-person groups ($\bar{X} = 2.67$) (t's = 2.39 and 2.04 respectively; $p < .05$). The direction of these differences is not readily explainable. Thus, it must be concluded that any expected significant effects for group size must be rejected.

Dependency

It was also hypothesized that subjects would work harder, i.e., produce more envelopes, under the high dependency condition than under the low dependency condition. This was merely a replication of several previous studies of Berkowitz. However, before this hypothesis could be meaningfully tested, it was necessary to establish the validity of the dependency manipulation. This was accomplished by examining the post-experimental question which asked the subjects, "To what extent was the supervisor's chance of winning the prize dependent on your performance?" The subjects' responses to this question are presented in Table 3 and suggest that the manipulation was successful. Subjects in the low dependency condition indicated on a 11-point scale that their supervisor was

TABLE 3

Mean Responses to Post-Experimental Questions
Relevant to Experimental Manipulations

Question	Mean Responses		
"To what extent was the supervisor's chance of winning the prize dependent on your performance?" (11-point scale)		High Dependency	Low Dependency
	Male	4.76	6.08
	Female	4.49	6.39
	Total $\bar{X}$	4.63	6.24
"How hard did you work to make the envelopes?" (5-point scale)			
	Total $\bar{X}$	1.94	1.89
"Do you think that the experimenter knows how many envelopes you have produced?" (Yes = 5) "If you think that the experimenter does not know of your productivity, check one of the following alternatives as to when she might find out: (4) sometime today (3) by the end of the week (2) by the end of the summer school term (1) never."		Same Experimenter	Other Experimenter
	Total $\bar{X}$	2.22	2.13

less dependent upon their performance ($\bar{X}$ = 6.24) than did subjects in the high dependency condition ($\bar{X}$ = 4.63; t = 3.50; df = 141; $p < .001$).

The analysis of the productivity scores (Table 1) reveals a significant main effect for dependency (F = 4.89; df = 1, 120; $p < .05$). Contrary to the prediction, however, the means are in the opposite direction. Since the mean productivity scores indicate that subjects in the low dependency condition ($\bar{X}$ = 4.33) worked significantly harder than subjects in the high dependency condition ($\bar{X}$ = 3.18), the first hypothesis must be rejected.

A further examination of the post-experimental questionnaire data is consistent with the failure to find increased output with increased dependency. In response to the question, "How hard did you work to make envelopes? Circle the number on the scale which corresponds with your opinion," subjects in the high ($\bar{X}$ = 1.94) and low dependency conditions ($\bar{X}$ = 1.89) indicated on a five-point scale that they worked equally hard to help their supervisors. Thus, although subjects perceived that their supervisors were differentially dependent upon them, this did not lead them to vary their level of help.

Sex of Subjects

In addition to these major hypotheses, it was predicted according to previous research that male subjects would produce more under the low dependency condition than under the high dependency condition, and that female subjects would work harder under the high dependency condition than under the low dependency condition. Since subjects were of the same sex in each grouping, the supervisor's sex and the sex of the other workers was constant for all subjects. As indicated in Table 1, although

sex was not a significant variable ($p < .20$), the interaction of Dependency X Sex was significant ($F = 3.99$; $df = 1, 120$; $p < .05$). Further examination of this interaction by t-tests revealed only partial support for the hypothesis. In all comparisons of the mean productivity scores (Table 2), it was found that male subjects in the high dependency condition produced less than male or female subjects under any of the other dependency conditions. Thus the only part of the hypothesis that was supported was that male subjects produced more under the low dependency condition than under the high dependency condition. In contrast, the prediction that female subjects would work harder under the high dependency condition than under the low dependency condition was not supported. Female subjects worked the same amount under both levels of dependency.

In the post-experimental questionnaire both female ($\bar{X} = 6.39$) and male ($\bar{X} = 6.08$) low dependency subjects indicated that their supervisors were less dependent upon them than did female ($\bar{X} = 4.49$) and male ($\bar{X} = 4.76$) high dependency subjects. Therefore, although subjects correctly perceived dependency, they did not differentially produce as predicted.

Experimenter Awareness of Subjects' Productivity

Finally, it was hypothesized that whether or not the experimenter knew of the subjects' productivity would not make any difference to their performance, i.e., that there would be no difference in productivity between the same and other experimenter conditions. The failure to find a significant main effect for experimenter awareness ($F = 1.99$; $df = 1, 120$; $p < .20$) thus indicates that the subjects were probably responding to the manipulated level of dependency and not to the experimenters' knowledge of their performance.

The interaction between experimenter awareness and level of dependency, although not significant was large enough to warrant investigation ($F = 3.19$; $p < .10$). Subjects in the low dependency-same experimenter condition worked harder than subjects in the other dependency-experimenter conditions. This result is probably a chance finding since the post-experimental questionnaire did not support the subjects' differential perception of experimenter awareness. The effectiveness of this manipulation was tested by the post-experimental question, "Do you think the experimenter knows how many envelopes you have produced?" If the subjects answered "No", that the experimenter was not aware of their productivity, they were then asked to check one of four alternatives as to when the experimenter might find out about their productivity, ranging from "sometime today" to "never". As indicated in Table 3, subjects in the same experimenter and other experimenter conditions both believed that their experimenter would know of their productivity "by the end of the school term" ($\bar{X}$'s = 2.22 and 2.13 respectively). The failure to find a significant main effect for experimenter awareness may be due to either: (1) the failure to manipulate this variable successfully, or (2) the same reaction of subjects to both types of experimenters.

The Subject's Perception of the Experiment

The failure of the experimental manipulations may be due to the fact that the subjects saw through the deception or saw the experiment as testing something else. Although answers to specific questions about specific manipulations revealed no basis for this view, their response to several more global questions may shed some light on this question.

They were asked "The purpose of this experiment was to examine a test of supervisory ability, to see to what extent a supervisor's communication skills had on the output of his workers. Do you think that this experiment succeeded in its purpose?" The majority of the subjects (104 out of 144) answered "Yes" to this question, indicating that they believed that the experiment had been successful. The question, "Did you feel that this experiment was looking at something else? If so, what?", was examined to learn how they perceived the purpose of the experiment. Only four subjects indicated that they believed the experiment was interested in the number of envelopes made by each worker for the supervisor. If we can consider the subjects' responses to the post-experimental questions as true indicators of their feelings about the experiment, a large majority of the subjects believed that the experiment was indeed looking at a test of supervisory ability.

Nevertheless one must be cautious in the interpretation of these data. It must be kept in mind that the data were collected after the subjects had responded and their answers may reflect justifications for the amount of work they did in the experiment, rather than their true feelings at the time.

CHAPTER IV

DISCUSSION

This study was designed to investigate the effects of certain variables, namely: number of subjects per group; level of dependency; sex of subjects; and subjects' concern about the "experimenter's awareness" of their productivity, on the amount of work that a subject would do for a peer in a non-emergency situation. A discussion of the results in terms of each of these variables is presented in the following sections.

Group Size

It was predicted that subjects would work harder for the dependent peer the smaller the size of the group. This prediction was based on previous work by Darley and Latane (1968), Latane and Darley (1968), and Latane and Rodin (1969), who found less helping behavior in an emergency situation when there were more people present. Their explanation of this effect was that responsibility became so "diffused" among the group that no one person felt individually concerned about helping the person in distress. It was predicted that the same effect would occur in a non-emergency laboratory situation, such as that employed in the present study.

However, contrary to this prediction a significant main effect for group size was not found. Even in examining the interaction between dependency and group size, it was found that there were inconsistencies in the relation of helping behavior with group size. These negative

results suggested that group size is not an important determinant of helping behavior in non-emergency situations.

These results may be due to the different perceptions subjects have of the two situations. In the emergency situations each subject is aware not only of his responsibility to help, but he is also very aware of the presence of other people, in front of whom he does not want to appear foolish by helping a person who might not really need his help. However, the situation can be solved either by helping the individual in distress or by doing nothing and leaving it up to someone else to intervene. The presence of other people tends to decrease each person's sense of responsibility, and increases the probability that he will leave it up to another to solve the situation. In contrast to emergency situations, in the Berkowitz procedure subjects are told what to do and how to do it. The amount of work they do will not solve the situation, but only contribute to a solution. In fact, subjects may be so involved with their performance in the experimental situation, and how well they are doing, that they are unconcerned about the welfare of their peer who needs help. Since there is no great feeling of responsibility even when the subjects are working alone, there can be no diffusion of responsibility when they believe they are working in a group. The subjects merely work at the same level they would if they were working alone.

Dependency

It was also predicted that subjects would work harder to help a peer who was more dependent upon them (high dependency condition) than to help a peer who was less dependent upon them (low dependency condition).

Berkowitz and Daniels (1963, 1964), who had obtained these results, explained them by means of a "social responsibility norm". They contended that subjects who helped a dependent peer were conforming to this norm which prescribes that people should help those who are dependent upon them. Since the present study constituted a replication of Berkowitz's previous experimental conditions, it was expected that our subjects would also respond to a higher level of dependency by giving more help.

Although there was a significant main effect for dependency, the results were exactly opposite to the prediction, i.e., subjects in the low dependency condition worked significantly harder than subjects in the high dependency condition. These results cannot be explained by the failure to manipulate the levels of dependency successfully. In fact, an analysis of the post-experimental reports revealed that subjects in the higher dependency condition actually believed that their supervisor was more dependent upon them than did subjects in the low dependency condition.

Why then were the results in the opposite direction to what had been predicted? In order to adhere to the social responsibility norm and thereby help a dependent peer, people must first have learned the norm and be aware of its applicability in each particular situation. In this study it appears that the subjects were <u>not aware</u> of the social responsibility norm. In examining the post-experimental questionnaires Berkowitz found that subjects felt more obligated to help their peers in the high dependency condition (Berkowitz, Klanderman and Harris, 1964). Although this study employed similar post-experimental questions, such as "Did the fact that the supervisor was dependent on you make you work any harder?", subjects in the high dependency condition indicated that they were not more aware of the social responsibility norm, and did not feel any more obligated to help their dependent peers.

For some reason, the social responsibility norm was not differentially activated in the high and low dependency conditions. Perhaps something about the experiment, the "demand characteristics" (Orne, 1962) of the situation induced the subjects to believe the experimenter was primarily interested in the task. In this way the subjects may have become more task oriented than dependency oriented. They may have believed that the experimenter was only trying to get them to relax by telling them that their supervisor was only partially dependent on their performance. They may have believed that the experimenter actually wanted them to work as hard as they could. This would then help to explain the higher productivity of the low dependency condition subjects.

It is interesting to note that, although the low dependency subjects worked significantly harder, they did not believe that they produced any more work. In response to the post-experimental question, "How hard did you work to make envelopes?", subjects in the high and low dependency conditions indicated that they worked equally hard. Here then is a discrepancy between what the subjects indicate that they believe when answering a post-experimental question, and what actually occurs. Do their post-experimental question responses reveal their real feelings during the experiment? Or do they answer the questions as they feel the experimenter would like them to answer? When the majority of the subjects indicated that they believed that the experiment was indeed looking at a test of supervisory ability, perhaps this was not their true feeling; perhaps it was only a justification for the amount of work they did. It may thus be necessary to examine such post-experimental reports in a more critical manner.

Sex of Subjects

It was predicted that males would work harder for a less dependent same-sex peer, while females would work harder for a more dependent same-sex peer. Schopler and Bateson (1965) and Schopler (1967) previously found this to be the case. They postulated that female subjects were more aware of the "social responsibility norm", and felt more obligated to conform to it, while male subjects were more interested in retaining their status than in helping a dependent male peer.

As expected, a significant interaction between dependency and sex was found. However, further examination of this interaction by means of t-tests only revealed one significant difference, that male subjects in the high dependency condition produced less, i.e., helped less, than male or female subjects in any other condition. As predicted, male subjects worked significantly harder under the low dependency condition, but, contrary to the prediction, female subjects worked the same amount in both the high and low dependency conditions.

It is very difficult to understand why the female subjects reacted in this way. The post-experimental questions may offer some explanations. On the post-experimental questionnaire, male and female subjects indicated that they did not feel differentially obligated to help their dependent peer. If female subjects are more influenced by the social responsibility norm, it would seem likely that they would have indicated their stronger felt obligation to help on the post-experimental questionnaire. Subjects in the high and low dependency groups also did not answer these questions differently. As suggested previously, it may be that the subjects were not aware of the social responsibility norm in this experimental situation.

If this is the case, then any differences within sex groupings would be negated.

Subjects' Concern About Experimenter Awareness

It was also predicted that the subjects' concern about the "experimenter's awareness" of their productivity would not significantly influence their productivity. This variable was manipulated by having a "same experimenter" condition in which the experimenter who had been running the experiment would also learn about the subject's productivity, and an "other experimenter" condition, in which another experimenter would find out how many envelopes they had produced. If the subject was responding to the experimental manipulations and not to the concern that the experimenter would know how much he had helped, then there should be no difference between subjects in the "same" and "other" experimenter conditions. This hypothesis was supported, in that subjects in the "same experimenter" condition did not work significantly harder than did subjects in the "other experimenter" condition.

Unfortunately, this may have been due to a failure to create different perceptions of the experimenters in the subjects. As suggested in the post-experimental questionnaire, the subjects in both the "same experimenter" and "other experimenter" conditions perceived their experimenters to be the same. This could mean that: (1) the subjects were not influenced by their experimenters, i.e., they were not concerned about what their experimenters thought of them; or (2) there was no difference between the two types of experimenters.

Although this present study does not give definite answers, it is interesting to note that Berkowitz, Klanderman, and Harris (1964) also did not find a significant effect for experimenter awareness even under more extreme experimenter differences. It is plausible to assume that the subjects are not helping merely to please their experimenter who they feel is observing them.

Implications for Further Research

This study generally did not support the hypotheses. One reason could be that the subjects were not aware of the applicability of the social responsibility norm in this experimental situation. The post-experimental reports lend credence to this speculation because the subjects did not indicate differential awareness of the norm. Why then were subjects not aware that they should help their peers? It was suggested that the subjects were too task-oriented. This could be studied by having two similar conditions, one specifically task-oriented, and one in which the subjects were made very aware that it was a helping situation. We would expect more helping behavior in the latter condition if the negative results of this study were indeed caused by an insufficient activation of the social responsibility norm. It would be interesting to manipulate arousal of this norm, to see its exact effect on helping behavior.

In speculating about the non-significance of group size, it was suggested that the subjects viewed the requirement of help-giving differently in the laboratory and emergency situations. In the laboratory condition the subjects could not solve the situation by helping, even

if they alone were helping their supervisor. Even if they worked as hard as they were able, their supervisor might not win the bonus. This speculation could be tested by having the supervisors 100 per cent dependent on the workers' productivity. If this line of reasoning is correct, we would expect Darley and Latane's diffusion of responsibility effect with increasing group size.

If these kinds of studies could be carried out to examine the optimal conditions under which helping behavior occurs, their results could be used to create a real worker-supervisor relationship, in which the most amount of work would be done. Perhaps in this way, information could be gained on how to decrease resistance to a demand for help, and how to increase motivation to yield to this demand.

CHAPTER V

SUMMARY

This study examined the effects of four variables, namely: size of group; dependency; sex of subjects; and the subjects' concern about their "experimenter's awareness" of their productivity on help-giving in a non-emergency situation. One hundred and forty-four subjects, equally divided as to sex, were randomly placed in one of the twenty-four cells of 3 X 2 X 2 X 2 factorial design. They were told that the experiment was a test of supervisory ability and that one subject would be the supervisor while the other subject(s) would be the workers. It was ostensibly the supervisor's task to write instructions for the workers on how to produce envelopes, and it was the workers' job to construct paper envelopes, based on the supervisor's instructions. However, all subjects were in actuality "workers", who made envelopes based on the experimenter's handwritten instructions. The dependent variable was the subject's productivity, that is, the number of envelopes he made in the ten-minute work period minus twice the number he made in the five-minute practice (baseline) period.

The variable group size was manipulated by having the subjects work in a 2-, 3-, or 6-person group. Of course, in each group the subject believed that he was either working alone (2-person group) or with other workers (3 and 6-person groups) to help his supervisor win the gift certificate.

Dependency was manipulated by telling subjects in the high dependency condition that 80 per cent of their supervisor's evaluation for a five dollar gift certificate depended on their productivity, and by telling subjects in the low dependency condition that only 20 per cent of their supervisor's evaluation depended on the number of envelopes they made.

The effect of sex on helping behavior was studied by having an equal number of male and female subjects. To investigate the possibility that subjects worked to impress their experimenter and not to help their dependent supervisor, another variable was studied, the "experimenter's awareness" of the subjects' productivity. This was manipulated by having a "same" and "other" experimenter condition. In the "same experimenter" condition the experimenter who had been running the experiment would also be learning of their productivity at the end of the summer school term, while in the "other experimenter" condition, subjects were told that another experimenter would be taking over the rest of the experiment and only she would learn of the number of envelopes they had made.

The hypothesis that subjects would work harder in smaller groups for a dependent peer was not supported. Although there were no significant main effects or interactions involving the variable for group size, there was a large interaction of dependency with group size. Further examination of this interaction revealed that subjects in the 3-person groups worked harder than subjects in the 2-person and 6-person groups in the high dependency condition, while subjects in the different-sized groups worked approximately the same amount in the low dependency condition. This was of course contrary to the prediction and to the previous

research. It was suggested that subjects in the laboratory situation did not feel very responsible towards their supervisor since they could not solve the situation themselves. Increasing group size did not affect their perception of the situation, or their feeling of responsibility, and so they worked at the same level as they would have had they been alone.

It was predicted that subjects would work harder in the high dependency condition than in the low dependency condition. Contrary to prior research and to the prediction, subjects worked significantly harder in the low dependency condition than in the high dependency condition. However, in examining the post-experimental reports, it was found that the dependency manipulation had been successful. In other words, subjects in the high dependency condition indicated that their supervisor was significantly more dependent upon them than did subjects in the low dependency condition. On the basis of other post-experimental questions, to which subjects in the high and low dependency conditions did not reveal differently felt obligations to help a dependent peer, it was speculated that the subjects were not actually aware of the social responsibility norm at that time. It was further reasoned that the contextual cues of the experimental situation (Orne, 1962) caused the subjects to become more task oriented, and thus perceiving the task to be the important part of the experiment, and were not affected by the responsibility considerations.

It was predicted that male subjects would work harder for a less dependent same-sex peer while female subjects would work harder for a more dependent same-sex peer. As predicted there was a significant interaction of dependency with sex. But an analysis of the mean group

productivity scores revealed that there was only one significant effect. Male subjects worked significantly less than male or female subjects in the other conditions. The hypothesis was only partially supported. While male subjects worked less for a more dependent peer, the reverse was not true of the female subjects. This result was difficult to explain. In examining the post-experimental questions, it was revealed that there was no difference in the way the male and female subjects answered the questions. We had predicted female subjects to help more with increasing dependency because Schopler and Bateson (1965) and Schopler (1967) had found this and had suggested that females felt more obligation to help dependent peers. The post-experimental reports did not reveal this increased awareness of the social responsibility norm on the part of female subjects. It was suggested previously that subjects in the high and low dependency conditions were not aware of the social responsibility norm in the experimental situation as it was set up. If this was indeed the case, then sex effects in dependency conditions would no longer be meaningful.

It was predicted that the subjects' concern about their "experimenter's awareness" of their productivity would not be a significant variable. This was found to be the case. There was no significant difference in productivity between the "same" and "other" experimenter conditions. The post-experimental reports revealed no difference between the two experimenter conditions. This suggested that, either (1) the subjects were not influenced by their experimenter's opinion of them or (2) there was no difference in the "same" and "other" experimenter conditions.

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APPENDIX A

INTRODUCTORY INSTRUCTIONS TO SUBJECTS

The purpose of this experiment is to examine a test of supervisory ability. To do this we have tried to duplicate real work situations. In a real work situation there is a supervisor, one or more workers, communication between the supervisor and the workers, and a product produced by the workers. The product in this situation will be paper envelopes. It is the supervisor's task to write instructions to the workers on how to construct paper envelopes. The supervisor will write out instructions on carbon-copy, after being shown a sample envelope. Then, each worker will receive a copy of the instructions, and will be asked to produce this product for a period of time.

In this session, one of you will be the worker and the other one will be the supervisor. To select who will be the worker, and who will be the supervisor, and to select the room in which you will be working, I will ask you to draw a number from this box in a few minutes. You will work in the room designated by the number you draw. Before the experiment began, I arbitrarily decided that the person drawing a certain room number would become the supervisor. When you go to your room, instructions in your room will indicate to you whether you are a worker or a supervisor. You have been placed in separate rooms so that you can work independently of each other, without disturbing the other.

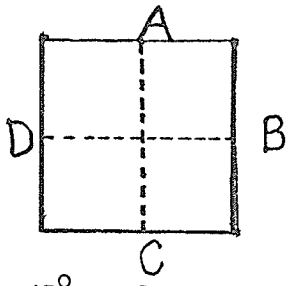
Now please draw to see in which room you will be working. In your room you will find written instructions, telling you if you are a worker or a supervisor, as I told you before.

Do you have any questions? Please go to your rooms.

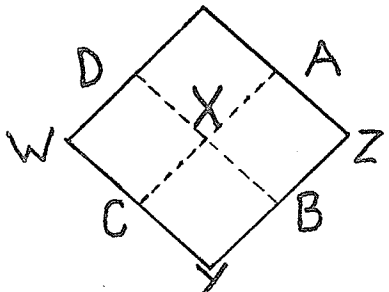
SUPERVISOR'S ENVELOPE-MAKING INSTRUCTIONS

(Instructions were hand-written in the experiment.)

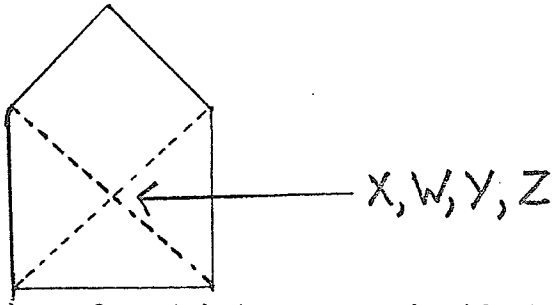
Place the paper before you and fold it into quarters. Then open it up as:



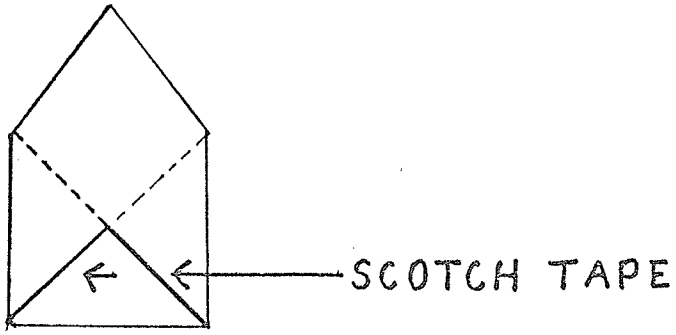
Now turn the paper at a 45° angle as:



If we label the three corners W, Y, and Z, and call the centre X, we can now make the envelope. Merely fold Y up to X, Z up to X, and W up to X. Your paper now looks like:



Use approximately three inches of scotch tape on each side to tape up the sides of the envelope as:



When you fold down the top, to meet X, you will have a completed envelope.

TAPED INSTRUCTIONS TO WORKERS

(re practice period)

You have just received the supervisor's instructions. As I told you when giving them to you DO NOT LOOK AT THE INSTRUCTIONS UNTIL TOLD TO DO SO.

After you have read the instructions, which you will do in a few minutes, you will practise making envelopes for 5 minutes. This will only be a practise session, in order to get you familiar with the task. In this practise period, and in the following work period, there are some important rules to remember. First, DO NOT mass produce the envelopes. Make the envelopes one at a time. Secondly, quantity is important in making the envelopes, not quality, although poorly made envelopes will not count.

You will have 5 minutes to practice making the envelopes.

Now turn over the supervisor's instructions. You have a few minutes to read the instructions before the practise period begins.

But remember, DO NOT START making envelopes until I tell you to begin.

BEGIN MAKING THE ENVELOPES

(5 minute work period)

STOP!

Stop making the envelopes. DO NOT FINISH the one you are working on. Place your practice envelopes in the box on the floor. As you were told before, these practice envelopes do not count.

TAPED AND XEROXED INSTRUCTIONS TO SUBJECTS

(re work period)

The first paragraph was the same for all subjects.

As I mentioned, we are trying to make this experimental work situation as realistic as a typical work situation. In a real work situation supervisors often receive bonuses based on their work. Whether or not they receive a bonus is based on several indices of their effectiveness as supervisors. In order to keep this experiment as realistic as possible, all supervisors in this experiment will be eligible to win a bonus as well. This will be in the form of a $5.00 gift certificate at Eaton's. Whether or not your supervisor wins this gift certificate depends on the evaluation received.

The second paragraph varied only for high and low dependency conditions and for the number of subjects in the group.

Second paragraph for subjects in the 2-, 3- and 6-Person High Dependency Groups

Your supervisor will be evaluated partly on the instructions devised for the workers by the supervisor, but most importantly on the workers' productivity. Eighty per cent of the supervisor's evaluation will depend upon how well the workers produce, while twenty per cent will be based on the quality of the instructions. It was decided to rate the supervisors on this basis because a good supervisor must be able to communicate effectively with workers. One way of looking at the effectiveness of this communication is to look at the output of the workers. In other words, eighty per cent of your supervisor's evaluation will depend on the number of envelopes made

by you, the worker (2-person group; you and the other worker, 3-person group; you and the other 4 workers, 6-person group).

Second paragraph for subjects in the 2-, 3- and 6-Person Low Dependency Groups

Your supervisor will be evaluated partly on the worker's productivity, but more importantly on the instructions devised for the workers by the supervisor. Eighty per cent of your supervisor's evaluation will be based on the quality of the instructions, while twenty per cent will depend upon how well the workers produce. It was decided to rate the supervisors on this basis because a good supervisor must be able to communicate effectively with workers. One way of looking at the effectiveness of this communication is to look at the quality of the supervisor's instructions. In other words, twenty per cent of your supervisor's evaluation will depend on the number of envelopes made by you, the worker (2-person group; you and the other worker, 3-person group; you and the other 4 workers, 6-person group).

The rest of the instructions varied only for same and other experimenter conditions.

Third, fourth and fifth paragraphs for the Same Experimenter Condition

Please do not start making envelopes until told to do so. You will have 10 minutes in which to make envelopes. At the end of this period, you will put all the envelopes you have made in the 10 minutes into the brown envelope on your desk. Then print your name on the outside of the brown envelope and seal it. To ensure that I will rate the supervisor's instructions as objectively as possible, without being influenced by the knowledge of how many envelopes each worker has made,

I will not open the brown envelopes until the end of the summer session. As soon as the work period is over, I will collect the brown envelopes containing your work envelopes and give you several questionnaires to fill out. Only at the end of the summer school term, when all the data have been collected, will I open the brown envelopes and count the number of envelopes made by each worker. By having the envelopes counted only at the end of the summer school term, we hope to keep this experiment as free from bias as possible.

Remember, do one envelope at a time. When I tell you to begin, start making envelopes. When I tell you to stop making envelopes, put all your completed, and uncompleted envelopes, made during the 10-minute work period, into the brown envelope and seal it.

Before the work period begins, I will go to each room to see if there are any questions.

Third, fourth, and fifth paragraphs for the Other Experimenter Condition

Please do not start making envelopes until told to do so. You will have 10 minutes in which to make envelopes. At the end of this work period, you will put all of the envelopes that you have made in the 10-minute period into the brown envelopes on your desk. Then seal it. I do not want to know how many envelopes you have made so that I can rate the supervisor's instructions as objectively as possible. To ensure that this is achieved, the rest of the experiment will be carried out by another experimenter. As soon as the work period is over she will collect the brown envelope containing your work envelopes and give you several questionnaires to fill out. At the end of the summer

school session, when all the data have been collected, she will open the brown envelopes and count the number of envelopes made by each worker. By having one experimenter rate the supervisor's instructions, and by having another experimenter determine each worker's productivity at the end of the summer school term, we hope to keep this experiment as free from bias as possible.

Remember, do one envelope at a time. When I tell you to begin, start making envelopes. When I tell you to stop making envelopes, put all your completed, and uncompleted envelopes, made during the 10-minute work period into the brown envelope and seal it.

Before the work period begins, I will now go to each room to see if there are any other questions. As I play no part in the rest of the experiment, please ask me any questions that you may have about the procedure before I hand over the experiment to the other experimenter.

APPENDIX B

POST-EXPERIMENTAL QUESTION BOOKLET

(The directions and each question presented were on a separate ½ page of a booklet.)

Answer all the questions in this booklet. Do not look at the next question until the previous one has been completely answered.

NAME _____

DATE _____

ROOM NUMBER _____

1. Did you have any idea who your supervisor was? Or in which room he was working? Did this make any difference in how hard you worked?

_____

_____

_____

2. How hard did you work to make the envelopes? Circle the number on the scale which corresponds with your opinion.

1	2	3	4	5
very hard	quite hard	about average	not too hard	as little as possible

3. Did you work hard for your supervisor? _____

4. To what extent was the supervisor's chance of winning the prize dependent on your performance? Circle the number on the following scale which corresponds with your opinion.

1 2 3 4 5 6 7 8 9 10 11

completely dependent — 50% dependent — not at all dependent

5. Did the fact that the supervisor was dependent on you make you work any harder? YES? _____ NO? _____

6. Would you have worked just as hard if the supervisor had not been dependent upon you? YES? _____ NO? _____

7. Why did you work as you did?

_____ for your own self-satisfaction

_____ to make the best worker impression on the experimenter

_____ to help your supervisor win the bonus

8. Do you think the experimenter knows how many envelopes you have produced? YES? _____ NO? _____

If you think that the experimenter does not know of your productivity, check one of the following alternatives as to when she might find out:

_____ sometime today

_____ by the end of the week

_____ by the end of the summer school term

_____ never

9. Did the fact that the experimenter would eventually know of your productivity make any difference in the number of envelopes you made?

_____

10. The purpose of this experiment was to examine a test of supervisory ability, to see to what extent a supervisor's communication skills had on the output of his workers.

Do you think that this experiment succeeded in its purpose?

_____

11. Did you feel that this experiment was looking at something else? If so, what?

_____

APPENDIX C

SUBJECT INFORMATION

This experiment was primarily interested in the amount of work that one person would do for another person who was dependent upon him. In this situation, the supervisor was dependent upon the number of envelopes made by you, the worker, in order to win a $5.00 gift certificate. Since it was necessary to control for the wide variety of instructions that different supervisors might devise, it was decided to let all the students in the experiment become workers. In this way we were able to have a High and Low Dependency Condition. In the High Dependency Condition the supervisor was dependent upon the workers' productivity to a large extent (80%), while in the Low Dependency Condition the supervisor was dependent upon the workers' productivity to a much less degree (20%).

You were in the Low: High Dependency Condition.

The number of workers was also varied to see its effect on the number of envelopes produced by each worker. There were groups of 2, 3, and 6 people.

We found that subjects (Ss) in the Low Dependency Condition made more envelopes than those in the High Dependency Condition. This is not what we would have expected, based on previous research. There could be various reasons for this discrepancy. For one thing, the instructions used were not the same as those used in previous research. However, a further analysis of the data is needed to determine the reasons for our results.

We also found that people in the 3-person groups made significantly more envelopes than those in the 2- and 6-person groups.

Because this too is inconsistent with previous research, a further investigation of the data is needed.

If you have any comments about the results, or any questions about the experiment, please phone Mrs. Glenna Morris at 453-8353, up until August 25th.