

THE EFFECTS OF SUCCESS AND FAILURE ON
HELPING BEHAVIOUR

175

THE EFFECTS OF SUCCESS AND FAILURE-ON
HELPING BEHAVIOUR

by

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A Thesis

Submitted to the school of Graduate Studies
in Partial Fulfilment of the requirements
for the Degree
Doctor of Philosophy

McMaster University

October 1975

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TABLE OF CONTENTS

CHAPTER I.	INTRODUCTION
CHAPTER II.	GENERAL REVIEW OF THE LITERATURE ON ALTRUISM: A BRIEF OVERVIEW.
CHAPTER III.	A REVIEW OF THE EFFECTS OF SUCCESS AND FAILURE... ON HELPING BEHAVIOUR.
CHAPTER IV.	GENERAL METHODOLOGY
CHAPTER V.	INITIAL STUDIES
CHAPTER VI.	THE EFFECTS OF SEX OF SUBJECTS AND SEX OF EXPERIMENTER (REPLICATION STUDIES)
CHAPTER VII.	MANIPULATIONS OF EXPLANATORY VARIABLES AND ADDITIONAL REPLICATIONS.
CHAPTER VIII.	REPLICATIONS USING DIFFERENT MANIPULATIONS OF SUCCESS AND FAILURE AND A DIFFERENT MEASURE OF HELPING BEHAVIOUR.
CHAPTER IX	OVERALL SUMMARY AND GENERAL DISCUSSION
APPENDIX I	INSTRUCTIONS AND MATERIAL
APPENDIX II	CORRELATIONAL FINDINGS
REFERENCES	

LIST OF ILLUSTRATIONS

		Page
FIGURE 1.	MOTOR TASK APPARATUS AND SETTING	70
FIGURE 2.	MEAN HELPING TIME (EXPERIMENT I)	89
FIGURE 3.	MEAN HELPING TIME (EXPERIMENT II)	94
FIGURE 4.	MEAN NUMBER OF HOURS VOLUNTEERED (EXPERIMENT III)	104
FIGURE 5.	MEAN HELPING TIME (EXPERIMENT III)	105
FIGURE 6.	MEAN HELPING TIME (EXPERIMENT IV)	109
FIGURE 7.	MEAN HELPING TIME (SEX OF SUBJECTS X SEX OF EXPERIMENTER)	113
FIGURE 8.	MEAN HELPING TIME (EXPERIMENT V)	139
FIGURE 9.	MEAN HELPING TIME (EXPERIMENT VI)	151
FIGURE 10.	MEAN NUMBER OF SHEETS SORTED (EXPERIMENT VI)	152
FIGURE 11.	MEAN NUMBER OF EXPERIMENTS VOLUNTEERED (EXPERIMENT VI)	153
FIGURE 12.	MEAN NUMBER OF SHEETS SORTED (EXPERIMENT VII)	164
FIGURE 13.	MEAN HELPING TIME (EXPERIMENT VII)	165
FIGURE 14.	MEAN HELPING TIME (EXPERIMENT IX)	183
FIGURE 15.	MEAN AMOUNT OF DONATION (EXPERIMENT X)	190
FIGURE 16.	MEAN AMOUNT OF DONATION (EXPERIMENT XI)	199
FIGURE 17.	MEAN HELPING TIME (COMPARISON BETWEEN EXPERIMENTS)	205
FIGURE 18.	MEAN HELPING TIME (SEX OF SUBJECTS X SEX OF EXPERIMENTER)	209
FIGURE 19.	MEAN HELPING TIME (COMPARISON BETWEEN EXPERIMENTS)	212

	Page
FIGURE 20. MEAN HELPING TIME (COMPARISON BETWEEN EXPERIMENTS)	215
FIGURE 21. NATURALISTIC STUDIES (COMPARISON BETWEEN EXPERIMENTS)	219
FIGURE 22. HYPOTHETICAL RESULTS	226

ABSTRACT

During the past decade a large number of studies on altruism and helping behaviour have been carried out. Among these, however, are only a handful of experiments which deal with the effects of success or failure on helping behaviour. This dissertation reports the results of a series of eleven experiments on this topic carried out using male and female university students.

The first of these studies indicated that subjects who had failed on a motor task subsequently helped the experimenter more than subjects who had either succeeded or were controls. These findings contradicted previous research which had found that subjects who experienced success helped more than subjects who experienced failure.

Additional experiments designed to clarify this conflict, revealed that our findings were reliable as long as the subject and the experimenter were of the same sex. Under these conditions, failure subjects helped the experimenter more than success subjects. However, when the subject and the experimenter were of the opposite sex, a partial reversal was obtained. Success subjects then helped the experimenter more than failure subjects. This however could not, by itself, account for the apparently contradictory results since previous researchers had generally used both males and females as subjects even though only one confederate

(either male or female) was used to request help.

Subsequent studies in this series clearly demonstrated that whether the person requesting or needing help was the same or a different experimenter who was aware or unaware of the subject's prior performance on the task was the major factor which could account for the apparently conflicting findings. In general, the findings indicate that failure helps more if the person requesting help knows that the subject has failed.

Throughout this research a wide variety of dependent and independent variables were employed and the initial results were repeatedly replicated. In other words, these findings are robust.

An "image-repair" motive is suggested to account for the findings that failure subjects helped a person who knew of their prior performance more than control subjects, who, in turn, helped such a person more than success subjects. The "warm glow of success" (Isen, 1970) hypothesis is recognized as still being the best explanation of the finding that success subjects helped a person who did not know of their prior performance more than control subjects, who, in turn, generally helped such a person more than failure subjects.

ACKNOWLEDGEMENTS

I would like to express my thanks to Dr.D.W. Carment for his constant support and invaluable encouragement throughout this research project. His availability and interest made the realization of the project a truly joyful experience. My gratitude to him is profound indeed.

I also wish to thank my wife Michelle Plante Bégin for all the moral support, encouragement, and day to day interest she has provided during these years of graduate school. Her typing of the manuscript is also greatly appreciated.

Finally, I want to express my sincere gratitude to Doctors Stanley Heshka, Steven Link and P.L. Newbigging, members of my Ph.D. research committee, for their invaluable support throughout this project.

This research was carried out while the candidate held a Doctoral Fellowship from the Education Minister of the Quebec Province and it was facilitated by Canada Council Grants No. S72-1829 and No.S74-1103 to Dr.D.W. Carment.

Chapter I

Introduction

A) General Comments and Definitions

Daily reports of violence have led to justifiable concern with the problem of antisocial behaviour. This preoccupation, however, has not been accompanied by similar attention to the converse behaviour termed "charitable" or altruistic (Midlarsky, 1968). Budd (1956) in his review of the history of a "forgotten aspect of social thought" in America, concluded that although concern with altruism had "threatened to become a fad" in the 1890's, it had quickly died away. Very recently, though, stimulated by recent dramatic instances of social irresponsibility and of social apathy, (Berkowitz and Daniels, 1963; Darley and Latané, 1966;), there has been a renewed interest in altruism^{less}, as was the case in the past, as a social panacea or religious ideal, and more as an aspect of behaviour worthy of scientific investigation (Krebs, 1970).

Similarly, Walker and Mosher (1970) have emphasized,

"it is fair to credit the "Third Force" personalogists (Jourard, 1964; Maslow, 1962; Rogers, 1961; Schutz, 1967) with fostering a renaissance in psychology's interest in the healthy development of normal individuals (1970, p.887)."

After long neglect, social scientists have begun

systematically to investigate that behaviour variously designated as helpful, charitable, and altruistic. While sociologists have studied such diverse subjects as the characteristics of "good neighbors" (Sorokin, 1950), and the correlates of aiding responses in disaster (Logan, Killian, and Mars, 1952), studies by psychologists have explored the measurement of altruism in individuals (Sawyer, 1966), the development of altruism in children (Midlarsky and Bryan, 1967), and the situational determinants of the tendency to give aid (Bryan and Test, 1967). Thus, in recent years, the imbalance of research between antisocial and prosocial behaviour has been somewhat corrected. There has been a notable increase in both theoretical and empirical work in the area of altruism.

In his excellent review of the literature Krebs (1970) points out that the study of altruism is important at three distinct yet interrelated levels:

"At the first level, it supplies information about a set of behavior that constitutes the central goal of early socialization. As pointed out by Anna Freud (1963): we know that the child acts throughout the period of development above describe (from birth to age five) as if there was nothing more important than gratifying of his own pleasures and fulfilling of his powerful instincts, whereas education proceeds as if the prevention of these objects was its most important task (p.101)."

At the second level, altruism is important as a personality attribute. People who are considered altruistic

are reacted to differently from those who are considered selfish. Finally, the study of altruism raises some important questions about the ability of several influential theories (reinforcement, psychoanalytic and evolutionary) to account for the apparently altruistic aspects of human behaviour since they all suggest that human behaviour is essentially egoistic.

At this point, a statement concerning the definition of altruism is in order. As noted earlier, altruism has a long history of vernacular usage in the commonsense psychological descriptions of people, but its history as a scientific construct is very brief.

According to Leeds (1963), for example, an altruistic act (a) is an end in itself; it is not directed at gain, (b) is emitted voluntarily, (c) does good as judged by the recipient or spectators of the action.

For Darley and Latané (1968), the research question really is: "What determines, in a particular situation, whether or not a person helps another in distress?" This definition implies that any behaviour which benefits another in need, regardless of the helper's motives, is altruistic.

On the other hand Aronfreed (1969) argues that altruism is a predispositional component (not a specific form) of behaviour which is controlled by anticipation of its consequences for another individual. He regards empathy as essential to altruism. Because helpful behaviour may

stem from social pressure or expectations that all costs incurred in giving aid will be repaid one way or another, the Darley and Latané (1968) conception of altruism seems too general. Aronfreed's definition may, however, be too narrow. As Macaulay and Berkowitz (1970) suggest several kinds of empathic reactions may influence helping. The relief felt by the person whose need has been met might be experienced vicariously or the helper's satisfaction might be similarly experienced and the observer may be motivated to experience such satisfaction directly.

Generally, for the purpose of this dissertation we prefer to define altruism more broadly as requested or unrequested behaviour carried out voluntarily to benefit another without anticipation of tangible rewards from external sources. Obviously researchers in this area do not all agree and do not all use this theoretical definition of altruism as we have seen above. Some may argue that "requested" behaviour, for instance, is not within the domain of altruism. They may argue that this is really compliance with a request. This is a debatable philosophical question on which consensus is difficult since it essentially depends upon the strictness of the criteria selected. This is why examples have been given subsequently, which sometimes qualify as "altruistic" by our definition but not by a more stringent definition of altruism which may not include some of the key words in our definition such as "requested" or "tangible".

Furthermore, positive social behaviour takes various forms. Therefore prosocial research will involve different research strategies; although the definitional problems reviewed above still exist (cf. Severy, 1974,b; Krebs and Wispé, 1974;) and may be more common in social psychology than in some other disciplines, this is by no means unique to social psychology. One attempt to overcome the vagueness of theoretical terms is the use of operational definitions (Bridgman, 1927;).

"The basic notion is that the concept is synonymous with the operations that are necessary for its measurements and manipulation (Shaw and Costanzo, 1970, p.14-15)."

Helping behaviour, for example, has been operationalized to include, among others, the following: making paper boxes (Berkowitz and Daniels, 1963), returning lost wallets (Hornstein, Fish, and Holmes, 1968), helping a confederate in a laboratory test-taking situation (Goodstadt, 1971), picking up a young woman's groceries which were rolling around a supermarket parking lot (Wispé and Freshley, 1971), reporting a crime (Bickman, 1973), and so on.

The major difficulty with operational definitions is that the same concept may have two or more operational definitions and presumably, two or more meanings. Obviously this can lead to confusion. Whether these different dependent variables share a common genotypic core remains to be seen. Nevertheless, in contrast to the vagueness of the

theoretical terms, these operationalization of altruism are certainly a step forward in scientific enquiry.

Before proceeding, three other aspects of altruism must briefly be discussed. These concern the evidence of the existence of altruism, the evolutionary point of view and finally the development of altruism, especially in children.

B) The Existence of Altruism

The bulk of the recent research on altruism has made little attempt to establish the criteria and the existence of altruism even though the degree to which individuals may disregard the need of their neighbors appeared quite extreme when, on March 13, 1964 a young woman, Kitty Genovese, was stabbed to death in view of 38 witnesses in Kew Gardens, New York (cf. Darley and Latané, 1966). On the first occasion that the killer attacked her, Miss Genovese screamed, "Oh! my God, he stabbed me! Please help me!" From one of the apartments, a man called "Let the girl alone!" and the killer did so. Twice, the sound of voices and the turning on of the bedroom lights frightened the killer away, but each time he returned for a fresh assault. Not until 15 minutes after Miss Genovese had died and the killer had fled did anyone call the police. In addition, as Midlarsky (1968) points out, the one man who did so had called only after he first telephoned a friend in Nassau county for legal advice, and tried to persuade an old lady in another building to

make the telephone call for him. "I didn't want to get involved" he told the police.

Although there are many such cases of fatal indifference when aid was sorely needed, one can also cite numerous instances where help has been extended. In her discussion of the "norm of giving" Leeds, (1963) refers to such opportunities occasionally provided by requests for donations, whether of time, of money, or of blood. Still other opportunities for giving exist in those instances where there is either a "social vacuum" or a "role vacuum". According to Leeds (1963), a social vacuum occurs when a situation arises in which help is needed, but no social institutions are immediately available to provide it. A role vacuum exists when helpful behaviours are permitted, but not required, within the framework of a given role.

With regard to role vacuums, a teacher who visits the home of a pupil who is ill could be viewed as providing aid beyond the chance expectations of her role, as does a friend who is always available to help regardless of circumstances. Opportunities for altruism are also provided by the existence of a social vacuum. For instance, when an automobile accident occurs, no institutionalized means for immediate care is available in many cases. Thus, those first on the scene, whether requested or not, have an opportunity to exhibit altruism.

In addition to role vacuums and social vacuums we

might also consider as instances of altruism, behaviours which happened in more extra-ordinary situations, such as during the time of emergency following a natural disaster or during the long-term periods of stress created in war-time.

Thus, observational accounts provide evidence that individuals are likely to manifest aiding responses; these are requested or unrequested behaviours carried out voluntarily to benefit another without anticipation of tangible rewards from external sources in a variety of situations (Bettelheim, 1943; Grinker and Spiegel, 1945; Sorokin, 1950; Wallace, 1950; Maddi, 1967;). As will be seen later, an examination of naturalistic studies of altruism among animals and children yields similar conclusions. But first, let us briefly summarize the evidence concerning the acquired and genetic aspects of altruism and the paradox it creates for psychological principles.

C) The Evolution of Altruism

Few psychologists have discussed the genetics of altruism as competently as Campbell (1965; 1972). In his most recent paper, Campbell (1972) argues that there is no way in which individual altruistic behavioural tendencies can increase genetically over selfish egoistic ones, because, using an evolutionary model, inherent in the altruistic behavioural pattern is the very real possibility that the altruist will

die in the service of his altruism, thereby leaving fewer, or no, progeny. On the other hand, the bearer of cowardly or selfish genes will probably not "stand and fight and die", and so will live and procreate, and leave more bearers of cowardly, selfish genes. Since the argument against genetic selection for altruism is strong, Campbell concludes in favor of social evolution for altruism:

"In man, . . . , the behavioural dispositions which produce complex social interdependence and self-sacrificial altruism must instead be products of culturally evolved indoctrination, which has had to counter self-serving genetic tendencies (1972, p.21)."

Trivers (1971) on the other hand presents a model to account for the natural selection of what is called "reciprocally altruistic" behaviour, that is behaviour which in the long run is mutually beneficial to both the organism who helps and the one who is helped. In his model, the benefits of reciprocity depend on the unequal cost/benefit ratio of the altruistic act, that is, the benefit of the altruistic act to the recipient is greater than the cost of the act to the performer. Since a benefit or a return of some sort is in the long run always forthcoming; in reciprocal altruism, this kind of behaviour do not qualify as being altruistic, neither by Leed's (1963) definition reviewed above nor by our definition of the term. Nevertheless, for the purpose of comprehensiveness and since important researches have been completed in this area a summary of the major

findings on the topic will be included here.

According to Trivers,

"The preconditions for the evolution of reciprocal altruism are similar to those for the operation of kin selection: long lifetime, low dispersal rate, and mutual dependence (1971, p.39)."

The case of cleaning symbiosis, that is cleaning behaviours emitted by members of one species on and for the benefit of members of another, is important to analyse in detail, according to Trivers, because apparently altruistic behaviour is displayed that cannot be explained by kin selection. Feder (1966) and Maynard (1968) in recent reviews of the literature on cleaning symbiosis in the ocean report that over forty-five species of fish are known to be cleaners, as well as six species of shrimp. Cleaning habits have apparently evolved independently many times, yet some remarkable convergence has taken place.

"Cleaners, whether shrimp or fish, are distinctively colored and behave in distinctive ways. These features seem to serve the function of attracting fish to be cleaned and inhibiting any tendency in them to feed on their cleaners (Trivers, 1971, p.40)."

For example, the grouper not only fails to snap up the cleaner but opens its mouth and permits free entry and exit. If only a brief and momentary observation of the interaction between the two fishes is made, the fish to be cleaned may seem on the surface to perform several "altruistic" acts.

"Its desists from eating the cleaner even when it easily could do so and when it must go to special pain (sometimes at danger to itself) to avoid doing so. Furthermore, it may perform two additional behaviors which seem of no direct benefit to itself (and which consume energy and take time), namely, its signals its cleaner that it is about to depart even when the fish is not in its mouth, and it may chase off possible dangers to the cleaners (Trivers, 1971, p.41)."

The behaviour of the host fish is interpreted by Trivers to have resulted from natural selection and to be, in fact, beneficial to the host because the cleaner is worth more to it alive than dead. The host has the advantage of being able quickly and repeatedly to return to the same cleaner. In short, the host is abundantly repaid for the cost of its seemingly altruistic behaviour.

Trivers defends the same argument concerning warning calls in birds. In short, giving a warning call tends to prevent predators from specializing on the caller's species as well as its locality.

Finally, reciprocal altruism in the human species takes place in a number of contexts and in all known cultures (Gouldner, 1960). Reciprocal altruistic behaviours often meet the criterion of small cost to the giver and great benefit to the recipient. According to Trivers, no concept of group advantage is necessary to explain the function of human reciprocal altruistic behaviour.

In brief, Trivers (1971) has organized the relevant

psychological data into functional categories, and he has shown that the components of the system can complement each other in regulating the expression of seemingly altruistic and cheating impulses to the selective advantage of individuals.

Thus, although genetic factors cannot account for "altruistic" behaviours in animal and humans (Campbell, 1972), natural selection seems to favor "reciprocal altruistic" behaviours performed by both animals and humans (Trivers, 1971; Hamilton, 1964;).

At this point, it may be appropriate to review peripherally other evidence concerning the existence of "altruism" in animals eventhough this is not the main topic of this dissertation. Furthermore a note of caution should be mentioned at the outset; conceptually it is not clear whether or not the animal research is dealing with the same phenomena as the human research, eventhough in both the term "altruism" is used. Ant opomorphism on the part of observers seems a real possibility, particularly in the animal investigations. Nissen and Crawford (1936), for example, investigating the food-sharing behaviour in chimpanzees, found that the two chimpanzees tend to share food equitably and without a struggle, particularly when they occupy the same cage. This study is important, as noted by Midlarsky (1968), because food-sharing behaviour involves a certain measure of

sacrifice. Rice and Gainer (1962) found that, when faced with the choice of pressing a level which would lower a plastic block suspended in a harness, or lowering a squealing rat that was similarly suspended, rats chose the "helping" alternative. However, criticizing that study, Lavery and Foley (1963) proposed that the direct reinforcement that the rats received upon lowering a fellow rat might account for the rapid rate of their "helping" behaviour; that is, by lowering the rat, the other rats were terminating an unpleasant stimulus-noise. Later on, Rice (1965) found that rats pressed a level which lifted another rat out of a tank of water in which it was uncomfortably immersed, significantly more often than did rats which were not paired with a victim rat. According to Hebb:

"the primary problem is whether there is purposive behavior in which one animal helps another at some cost to himself (in material wealth, such as food, or in the expenditure of energy), when the behavior has not been induced by reward or by threat of punishment (Hebb, 1971, p.409)."

Hebb refers to the behaviour of a dog that prevents children from swimming, persistently "rescuing" them despite never having been taught anything of the kind and despite repeated punishment, as an example of the well-known guarding and protective behaviour often seen in dogs (Hebb and Thompson, 1954). However, it is logically impossible to establish the absence of reinforcement, since it entails the proof of the null hypothesis.

To support this argument, Krebs (1971) points out that the food-sharing behaviour reported by Nissen and Crawford (1936) might have been directed at the termination of a noxious begging response, in much the same way as the bar-press responses of the Lavery and Foley (1963) rats terminated the unpleasant squealing, a possibility explicitly recognized by the authors. Thus, so-called "altruism" in animals may actually be very instrumental for the performers.

Furthermore, it is quite possible that the small amount of unsolicited giving evidenced by two of six pre-adolescent chimpanzees in that study, was an experimenter effects that is, a result of modeling. Nissen and Crawford (1936) reported, in fact, that experimenters were able to facilitate unsolicited food passing. Rice's (1965) findings can be similarly criticized. Indeed, it is quite possible that empathically or vicariously experienced reactions supply reinforcement for behaviour that can be considered altruistic both in animals and in humans. Mirsky, Miller, and Murphy (1958) found for example, that rhesus monkeys who observed other monkeys emit fear responses performed a previously extinguished avoidance response. Miller, Banks and Ogawa (1963) reported that signs of anticipatory fear in one of a pair of monkeys served as a cue to his partner to press a lever to defer a shock to both and in a similar situation, Miller, Caul, and Mirsky (1967) found that normally reared

monkeys were able to learn to avoid shock by watching the facial expression of a normal partner. As Krebs point out:

"of considerable interest was the finding that the avoidance responses of the normal monkeys were accompanied by a psychophysiological sign of emotional arousal—cardiac acceleration. It is possible that the monkeys reacted to the information that they might receive a shock rather than to the distress of their partner (Krebs, 1971, p.413)."

However, another study found quite clear evidence that distress cues are noxious stimuli to rhesus monkeys. Masserman, Weckin and Terris (1964) noted that monkeys consistently refrained from pulling a chain that brought them food in order to avoid giving a shock to their partners. Thus, eventhough the monkeys in that study could get food on alternate trials by pulling a different chain, the evidence suggests that monkeys react empathically to signs of distress in their fellows and that their empathic reactions may mediate altruistic responses.

Furthermore, at least four experiments, at the human level, support the notion that empathic reactions can mediate altruistic responses (Aronfreed and Paskel, 1968; Aderman and Berkowitz, 1969; Krebs, 1970; Weiss, Boyer, Lombardo and Stich, 1973;). Aronfreed and Paskel (reviewed in Aronfreed, 1968) and Aderman and Berkowitz (1969) created situations designed to induce empathy and found that subjects exposed to those situations displayed a disposition to sacrifice goods and perform helping responses. Similarly

Krebs (1970) attempted to induce and measure positive and negative empathic responses and to measure their effect on altruism. In this experiment psychophysiological reactions of observers who watched a performer appear to receive rewards and punishments were measured and then the observers were given a chance to help the performer. It was found that subjects who were led to believe that they were similar to the performer evidenced the greatest psychophysiological reactions to his plights (as measured by changes in heart rate, blood pulse volume, and skin resistance). They also reported experiencing most empathy and they behaved most altruistically.

Finally, Weiss, Boyer, Lombardo and Stich (1973) found that people will actually learn an instrumental conditioned response, the sole reinforcement for which is to deliver another human being from suffering. Their experimental procedure was analogous to traditional instrumental escape conditioning. In escape conditioning, the subject learns to terminate a noxious stimulus by means of an instrumental response such as pressing a key. The subject learns to make this instrumental response, on each trial, upon the presentation of a cue which serves as a conditioned stimulus. Whereas the usual noxious stimulus is electric shock or loud noise, the noxious stimulus used by Weiss et al. (1973) was the simulated suffering of another human being. The instrumental conditioned response employed in the

experiment was key pressing. Their results (Latency of key pressing) showed that the experimental group which was altruistically reinforced gradually learned the instrumental response, as measured by starting speed, while the control group which received no reinforcement did not.

A host of other recent but less direct evidence also supports this contention that empathy can mediate altruism (Wispé, 1968; Aderman and Berkowitz, 1970; Bryan and London, 1970; Berkowitz, 1972; Mehrabian, 1972; Aderman Brehm and Katz, 1974; Iannotti, 1974;). Their results can be interpreted as supplying experimental support for the notion that humans vicariously experience the reactions of similar others and that these vicarious reactions may supply reinforcement for altruistic behaviour. Indeed, if a human observer can feel the emotions of another person, by delivering that person from suffering, for instance, it can be assumed with fair confidence that the sufferer will experience "relief" and as a result of the stimulus change will feel "happy". The human observer may be able to anticipate this final reaction of the sufferer and may desire to experience his "happiness" or "relief" vicariously. This may be reinforcing.

In any case, the main point is that it seems impossible to prove the existence of true "altruism" since it entails proof of the null hypothesis, a logical impossibility.

Since, as reviewed above, empathy may be a necessary

condition for altruistic behaviour, the question then becomes "How do people learn empathy?" This question is discussed in the next section on the development of altruism.

D) The Development of Altruism

Milgram (1963, 1965) has shown, in a laboratory experiment, that the closer people are physically to their victim, the less likely they are to inflict them with painful electric shocks. It is possible that the effect may have been mediated by the arousal of empathy when visual cues were available. However it does not tell us how empathy comes about. As Staub (1975) points out there has been in recent years a dramatic rise of interest in the development of morally desirable tendencies, in how children for instance, learn to behave so that it benefits others, even if this involves some self-sacrifice.

Kohlberg (1963), Bandura and Walters (1963) and Krebs (1970) among others have reviewed the developmental literature on human altruism and all conclude that none of the proposed developmental theories (which all rely on simple mechanisms) can account for the known diverse developmental data. Trivers (1971) comes to the same conclusion:

"One would not expect any simple system regulating the development of altruistic behaviour. To be adaptive, altruistic behaviour must be dispensed with regard to many characteristics of the recipient, of other members of the group, of the situation in which the altruistic behaviour

takes place, and many other parameters, and no simple developmental system is likely to meet these requirements (Trivers, 1971, p.53)."

Among the other parameters, Staub (1975) includes the following possible agents of socialization of prosocial behaviour: parental nurturance, parental control, induction or pointing out to the children the consequences of their behaviour on others (both negative and positive) and modeling. Several additional socializing practices are suggested by Staub (1975) and their importance for the development of prosocial behaviour is considered on the basis of indirect, as well as some direct evidence. These include socializing agents who teach children's responsibility for the welfare of others and having them actually engage in prosocial as well as teaching prosocial behaviour indirectly, by having them act as collaborators in teaching others rather than being themselves the target of instruction. According to Staub:

"These socializing influences are thought to affect prosocial behavior because they lead to the learning of how one is expected to behave, and also to the acquisition of internalized values and standards which affect the manner in which children interpret events, this in turn affecting both emotional reactions and self-reinforcing strategies (1975, p.1)."

In response to the general question why people behave prosocially, Staub (1975) replies that we may learn very early that we are expected to do certain things for others. This learning may take place through a variety of means

including direct reward and punishment and thus we may learn that we can expect rewards for doing things for others and punishment for not doing them. Furthermore, beliefs, values or norms that are taught to children may come to be internalized by them and accepted as their own (Hoffman, 1970). The values that the parents advocate, the kind of behaviour they reward or punish, and the kind of models they provide, might all be important in determining the values that children learn. Finally, prosocial behaviour may also be motivated by empathy. Another's distress may be vicariously experienced (as reviewed earlier), and his positive emotions upon being helped may be anticipated and vicariously experienced. As Staub (1975) points out, the desire to enhance one's own vicarious satisfaction may motivate prosocial behaviour.

Thus, as the foregoing account indicates, there is general agreement among psychologists that no simple concept can account for the development of altruism. It is for this reason that both Trivers (1971) and Deutsch and Susman (1974) have recently advocated complex and multifaceted developmental approaches.

It can be seen then that the explanation of the development and maintenance of altruism has been and probably will continue to be a problem for sometime. As Trivers (1971) points out:

"the evidence has only begun to outline the complexities of the human altruistic system (p.54)."

E) Summary

In this chapter, the practical and theoretical importance of the study of altruism, the vagueness of the conceptual definitions of the term and the usefulness of operational definitions have briefly been summarized. For the purpose of this dissertation, altruism has been defined as requested or unrequested behaviour carried out voluntarily to benefit another without anticipation of tangible rewards from external sources. The animal and human evidence concerning the existence of altruism and reciprocal altruism, particularly from an evolution point of view was also reviewed. It was pointed out that the animal and human research may be dealing with something different conceptually, even though both are labelled "altruism".

Finally, the antecedents of altruism such as parental influences, models, norms, rewards and empathy were discussed in relation to the development of altruism in children.

It was suggested that only a complex, multifaceted developmental approach can hope to account for the known intricacies of the data. The altruistic paradox remains unsolved. As Kaufman (1970) suggests, there is no instrumental altruism. If performed for the reward, the act would not be altruism. But as pointed out earlier, it is logically impossible to show that no reinforcements are involved since this amounts to the proof of the null hypothesis, an obviously pointless task under any circumstances. Since

this is conceptually not possible as the matter stands now,
the conceptual analysis of altruism needs elaboration.

Chapter II

General review of the literature on human altruism: a brief overview.

A) Introduction

Over the past few years researchers have studied so many different aspects of altruism that an integrated overview of this area is becoming increasingly difficult. Although it is the purpose of this chapter to attempt such an integration, it is in no way intended to be exhaustive or thoroughly comprehensive. The major purpose is to give the reader who is unfamiliar with this area of research some idea of the types of variables involved as well as an awareness of their general effect on helping behaviour. To do so, this review will include (1) personality traits correlated with altruism and with measures of altruism, (2) social norms and modeling such as the social responsibility norm, the norm of giving, the norm of reciprocity, the norm of equity, the just-world notion and the deserving norm. Modeling effects also will be discussed. (3) Interpersonal influences which include attractiveness, friendship, parent-child relationship and group affiliation; (4) social roles and social class and lastly (5) demographic variables such as age, sex, and family size.

The contents of this chapter are derived mainly from a number of recent reviews of the literature (Bryan and Test,

1967; Midlarsky, 1968; Latané and Darley, 1970; Macaulay and Berkowitz, 1970; Bryan and London, 1970; Krebs, 1970; Trivers, 1971; Berkowitz, 1972; Wispe, 1972; Staub, 1973 b;).

The effects of temporary psychological states such as positive and negative affect, success and failure, competence, self-esteem, guilt feeling, moods and so on, on altruism will be reviewed in detail in chapter III and therefore will be mentioned here only when directly relevant. Thus, although the focus of this dissertation is on the effects of success and failure on helping behaviour, and although the literature relevant to this line of research will be summarized later, it is important for the reader to note immediately that the contents of this more general review of the literature on altruism has some bearing on the present research. Although it was not the main purpose, throughout the research, some personality questionnaires (Rotter's internal-external locus of control scale, for example), and some biographical data such as subject's age, sex, family size, birth-order position and parental income were collected, and therefore, correlations between these and measures of helping behaviour could be assessed. These findings will mainly be reported in appendix II.

B) Variables Studied

1...Personality Traits

Several studies have reported correlations between

measures of socially oriented personality characteristics and prosocial behaviour. Turner (1948) found that altruism ratings of parents, teachers, and social workers correlated most highly with ethical goodness, emotional stability, and social adjustment. Cattell and Horowitz (1952) also found a positive link between cyclothymia (social extroversion) and ethical attitudes among females, while Friedrichs (1960), using fraternity members and self-ratings, found sociability, in-group involvement, and attractiveness as a friend related to altruism among college students. Females high in need for affiliation (Ribal, 1963) have been found to be more altruistic, and socially dependent children have been observed to be more willing to share with others (Rutherford and Mussen, 1968). It is not surprising that need for social approval and social responsibility ratings would be correlated with prosocial behaviour. Yet neither Rutherford and Mussen (1968) working with nursery school children on need approval, nor Darley and Latané (1968) who related differences in both need approval and social responsibility to giving help in an emergency found positive relationships. Furthermore, Staub and Sherk (1970) observed a negative correlation among children between need for approval and sharing candy with unknown peer. Finally, Sawyer (1966) reports that YMCA students were more altruistic than social science or business school students, and that altruism did not relate to authoritarianism.

It can be seen that investigations which have correlated personality traits and rating-scale or pencil-and-paper measures of altruism such as that of Sawyer (1966) have found a large number of significant relationships. Studies in which personality traits were correlated with behavioural measures of altruism, on the other hand, have generally been less productive. The difficulties arise from the fact that behavioural indices of altruism are largely situation-specific. As Krebs (1970) points out, it would seem that the more unusual the situation, the less the effect of personality variables. Darley and Latané's (1968) subjects, who responded to emergency pleas for help, did not differ from those who failed to respond on measures of Machiavellianism, need for approval, and social responsibility. Korte (1969), in a similar situation, failed to find relationships between helping in an emergency and deference, autonomy, or submissiveness.

Other studies have reported correlations between behavioural measures of altruism and locus of control, a concept developed by Rotter (1966). Briefly stated, the concept postulates that a reinforcement may be perceived by a person as either being a function of his own behaviour (internal locus of control), or as being a function of luck, chance, fate, whim, or powerful others, and therefore unpredictable due to the great complexity of the surrounding forces (external locus of control). Rotter (1966)

constructed a questionnaire to measure this variable and in most cases, it is scores on this questionnaire that have been found to correlate with behavioural measures of altruism. Gore and Rotter (1963) found, for example, that students were more willing to help a civil rights project if they thought they had internal control over their fate than if they thought their fate was externally controlled. Midlarsky (1968) also reported a positive correlation between helping (at the cost of receiving shocks) and internal locus of control. Finally Staub (1968) found that fourth-grade children who were also characterized as high in internal locus of control shared more after an experience of success, and less after a neutral experience or an experience of failure than those characterized as low in internal control.

Another trait or personality characteristic studied in relation to altruism is intelligence. Exploring this relationship, Fisher (1963) found that more intelligent children learn to share at a more rapid rate than the less intelligent ones. Havighurst and Taba (1949) report a $+0.29$ correlation between intelligence and the development of a moral code in adolescents. However, since it is the more intelligent subjects who usually respond to experimental conditions with socially approved behaviour, the relationship between intelligence and altruism has not yet been clearly established.

Overall, although no general conclusions can be

drawn about the personality traits of benefactors due to variations in subject samples, in independent variables and in measures of altruism, there nevertheless seem to be some consistent trends among these findings. Altruistic children, for example, appear to be better adjusted socially than others and they are more emotionally stable. College-age female altruists are socially oriented, have social values and are nurturant people with low needs for achievement and dominance (McDonald, 1966). College-age male altruists also tend to be socially oriented and to feel they control their fate.

2...Social Norms and Modeling

Research has demonstrated that people tend to help those who are dependent on them (Berkowitz and Daniels, 1963; Ross, 1971; Ross and Braband, 1973; Schopler and Bateson, 1965;). Berkowitz and his colleagues attributed such helping to the influence of the "norm of social responsibility", which prescribes that people should help those who need help. The notion that people act in accord with normative standards of conduct seems quite sound as far as it goes. But as Krebs points out:

"Although normative analysts (e.g. Berkowitz 1968) have criticized the explanatory circularity of reinforcement theory, the postulation of social norms can also end in tautology. A particular response, for example, can be predicted on the basis of a norm. If it occurs, the norm is said to have had an effect. If it does not occur, the situation is said to fall outside the range

of the norm. In cases where the norm is established on the basis of the behaviour it is supposed to predict, it is in the same position as Skinner's (1953) reinforcer-its existence is established by the effect it produces (1970, p.294)."

Darley and Latané (1970) also have persuasively challenged the theoretical merit of the normative approach. In their view, existing cultural norms cannot be used to explain helping because they are inherently contradictory and vague. Norms prescribing self-sacrificing acts exist side by side with norms promoting selfishness. Moreover, these norms are seldom specific enough to provide clear guidelines for individuals confronting situations demanding help-giving. The danger, so the argument goes, is that invoking norms may lead us to an "explanatory fiction", by which any action is explained after the fact by matching it with one of the multiple norms available in the cultural matrix (Masor, Hornstein, and Tobin, 1973). Even with this strong criticism, many authors still emphasize the normative approach to explain altruism. For example, Leeds (1963) suggested that the norm of giving applies in situations where help is needed, but where no institutionalized means of help are available.

Reciprocity:

Another norm, called the norm of reciprocity by Gouldner (1960), prescribes that people should help those who have helped them, and that people should not injure those

who have helped them. Gouldner (1960) mentions some situations in which the norm of reciprocity does not apply, all of which involve dependent recipients such as the very young, the very old, and the sick. The norm of giving is said to apply in these latter situations when institutionalized means are nonexistent.

Strict reciprocity, however, falls outside the range of altruistic behaviour. On the other hand, behaviour which repays more than it owes, or repays favors that did not generate an expectation of return, seems altruistic. As described by Gouldner (1960), the sociological purpose of the norm of reciprocity is to prevent exploitation of the weak by the powerful and to insure that people pay their debts. However, reciprocity works better under some conditions than others. For example, the greater the need state of the recipient of an altruistic act, the greater his tendency to reciprocate, and the more scarce the resources of the donor of the act, the greater the tendency of the recipient to reciprocate (Heider, 1958; Tesser, Gatewood and Driver, 1968; Pruitt, 1968; Ross and Wilson, 1972;). There is also ample evidence that humans respond to altruistic acts according to their perception of the motives of the altruist. They tend to respond more altruistically when they perceive the other as acting "genuinely" altruistic, that is, voluntarily dispatching an altruistic act as an end in itself, without being directed toward gain (Saxe and Greenburg, 1974).

Krebs (1970) also noted that help is more likely to be reciprocated when it is perceived as voluntary and intentional (Goranson and Berkowitz, 1966; Lerner and Lichtman, 1968) and when the help is appropriate, that is, when the intentions of the altruist are not in doubt (Brehm and Cole, 1966; Schopler and Thompson, 1968).

The norm of reciprocity prescribes that people should help those who help them but it says nothing about third parties. Several studies however, have shown that humans may direct their altruism to individuals other than those who were hurt, and may respond to an altruistic act that benefits themselves by acting altruistically toward a third individual uninvolved in the initial interaction (Darlington and Macker, 1966; Berkowitz and Daniels, 1964; Freedman, Wallington and Bless, 1967;). The redirection of help to a third party may serve to allay guilt feelings without triggering the greater reparation to which the recognition of harm might lead. Furthermore, Thomas (1958) has shown that debts of reciprocity sometimes do not disappear with the death of the "creditor", but are extended to his kin. Thus, the bulk of the evidence supports Gouldner's (1960) suggestion that people tend to return favors. They are most likely to reciprocate when the original benefactor gave something he needed, when he had little, when he was sincere, and when he gave voluntarily. Moreover, several studies have found that when people are unable to contact

their original benefactors, they are prone to give to others.

Other norms that have been studied intensively include the norms of equity, the just world hypothesis and the deserving norms.

Equity:

Walster, Berscheid and Walster (1973) recently reviewed the evidence concerning the relationships between equity and helping behaviours and exploitative behaviours. According to the theory of equity, restoration of actual equity can be done in at least two ways: first, through compensation by means of acts designed to increase the victim's outcomes and second by self-deprivation, that is, a person could voluntarily reduce his own relative outcomes to the victim's level by either curtailing his own outcomes from the relationship or by increasing his inputs. Recent studies verify the fact that harmdoers frequently do compensate their victims (Walster, Walster, Abrahams and Brown, 1966; Walster and Prestholdt, 1966; Brock and Becker, 1966; Berscheid and Walster, 1967; Freedman, Wallington and Bless, 1967; Carlsmith and Gross, 1969; Berscheid, Walster and Barclay, 1969; Legant and Mettee, 1973;). The evidence concerning self-deprivation is less but nevertheless convincing (Sarnoff, 1962; Leventhal and Bergman, 1969; Brown, 1970; Schwartz, 1970, 1974; Collins and Hoyt, 1972; Regan, Williams and Sparling, 1972;).

According to this theory, restoration of psychologic-
al equity can be accomplished by any of the following strategies alone or in combination: derogation of the victim, minimization of the victim's suffering, or denial of one's own responsibility for the victim's suffering. That harm-doers often derogate their victims has been demonstrated by Sykes and Matza (1957), Davis and Jones (1960), Berkowitz (1962), Davidson (1964), and Walster and Prestholdt (1966). Sykes and Matza (1957) and Brock and Buss (1962) demonstrated that harm-doers consistently underestimate how much harm they have done to another. Finally, that harm-doers often deny their responsibility for harm-doing has been documented by Sykes and Matza (1957), Brock and Buse, (1962), and Milgram (1963; 1965). Although equity restoration techniques may not be altruistic in themselves because they may to some extent alleviate a guilt feeling or an uneasiness in the creditor, they are similar to the obligation to reciprocate felt by the recipient of help. To the outside observer who is unaware of a prior inequitable relationship, compensation and self-deprivation may indeed appear altruistic. What should be emphasized here is that human beings feel uncomfortable when the rules of equity are broken (Lane and Messé, 1971;) and generally react by attempting to restore equity in one way or another.

Justice:

The "justice" motive and the norm of deserving have

also been reviewed recently (Lerner, 1970; Long and Lerner, 1973; Chaikin and Darley, 1973; Staub, 1973;). In general, the data show that when people feel that material rewards received because of good work are earned and thus deserved, willingness to share these rewards is less than if they are felt to be unearned and thus undeserved. Similarly, people prefer to believe they live in a world where they can obtain those things they desire and avoid those they fear. This goal becomes translated into an attempt to believe that people in general deserve their fate either by virtue of their actions or because of their intrinsic personal worth. To the extent that these are the predominant norms in a given situation, altruistic behaviour is less likely to happen since, if we deserve what we get, there is no need to restore imbalance, injustice or inequity through altruism.

Modeling and Imitation:

One way in which normative behaviour can be elicited is through the observation of a model. Models, by setting an example, supply information about what is appropriate in various situations.

It would be expected therefore that a helpful model will elicit congruent altruistic behaviour. In fact, in a series of three naturalistic experiments by Bryan and Test (1967), it was demonstrated that observation of helpful and charitable models elicited congruent altruistic behaviour. Largely under the impetus of Bandura's work on imitation

(Bandura and Walster, 1963), numerous experiments in recent years have attempted to document the simple assertion that altruistic and selfish models will induce similar behaviour in observers. Krebs (1970) was able to list over twenty studies dealing with the effects of models on helping. A general review of imitative behaviour has also been provided recently by Flanders (1968). Although the predictions generated from modeling theory are appealingly simple, anomalies in the data do occur. In fact, as Masor, Hornstein and Tobin (1973) point out, a close examination of some of the results reveals that, under certain conditions, exposure to a "selfish" model induces equal or even more pro-social behaviour than a control model. These findings point to a fact that most social psychologists will readily recognize; the effects of modeling events are a function of the social context in which they occur. Thus, it is conceivable that if a social context is such that a selfish model's behaviour implies a violation of normative expectation held by the observer, the latter's behaviour may be aimed at counteracting the effects of transgression. The result may bear no resemblance to a modeling effect, as it is usually defined. Given this limitation, modeling theory predictions are otherwise well supported by the evidence. However, it should be noted that modeling effects have little generality in most instances (M.Harris, 1968;). No studies have established the situational generality and the longitudinal stability of

modeling effects which is a recurrent problem in altruism research. Thus norms, elicited through modeling or otherwise may affect helping behaviour in people but the theoretical merit is in doubt, due to lack of generality and stability.

3...Interpersonal Influences

Common sense would predict that more is given to liked others than disliked others. Probably because the prediction seems so obvious, only four studies on altruism (Daniels and Berkowitz, 1963; Epstein and Hornstein, 1969; Staub and Sherk, 1970; Goodstadt, 1971;) have directly manipulated interpersonal attractiveness as a main independent variable. With the exception of Goodstadt's (1971) results, in all cases it was found that subjects helped a liked partner more than a disliked partner. The relationship however is surprisingly weak. On the basis of Goodstadt's (1971) somewhat discrepant results it would seem that any tendency to help a liked person more than a disliked person is greatly influenced by other factors. The interesting aspect of this research is that, although there is a tendency to help likable persons, it can be overcome. It would seem that a person can readily be induced to help someone he dislikes, or to refuse to help someone he likes, by having his feelings made public. Thus the relationship between attractiveness and helping is not, like almost all other relationships, absolute. In fact, several studies have indirectly found a negative relationship between helping as

an independent variable and attractiveness as a dependent variable. Lerner and Matthews (1967) and Lerner (1968), for example, report that subjects who perceived themselves as responsible for the suffering of another tended to devalue the other in order to preserve their belief in a just world. Berkowitz and Daniels (1963) also found a negative relationship between helping and attractiveness.

It would also seem logical that a simple relationship between friendship and altruism should exist. That relationship seemed so obvious to Sawyer (1966) that he validated his altruism scale by examining differences between altruism directed to friends, strangers and antagonists. He found, as expected, that all groups in all conditions exhibited most altruism toward friends, and least toward antagonists. Other studies, however, have reported more complex relationships between generosity, a concept close to altruism, and friendship. Wright (1942) found, for example, that third graders were more likely to give the more desirable of two toys to a stranger than to a friend, a somewhat counterintuitive finding. In two experiments by Floyd (1964) a tendency for children to give less to friends than nonfriends in some situations was also observed. Some children in Wright's (1942) study acknowledged verbally that they were trying to make a friend. Floyd's (1964) findings on the other hand, can be interpreted from the recipient point of view to mean that generous friends are

taken for granted whereas generosity from a nonfriend is taken to be an overture to friendship, and stinginess from a friend is taken as evidence of a deteriorating relationship in need of repair. Epstein and Hornstein (1969) provided new data supporting Floyd's (1964) interpretation.

Parent-child relationships which may facilitate the performance of altruistic acts have also been examined. Rosenhan (1967) for example, found that individuals active in civil rights had a close relationship with a least one altruistic parent. Tomkins (1965) reported that prominent abolitionists were influenced by altruistic friends, and Rettig (1956) found that altruism in parents was positively correlated with scores made by college students on an altruism scale. Rutherford and Mussen (1968) reported that generous boys were more likely to perceive their fathers, but not their mothers, as highly nurturant, and depicted themselves, as inferred from doll play, as being more generous, less hostile, and less dependent than the miserly boys. Hoffman (1963), and Hoffman and Saltzstein (1967) also reported that the internalization of morality appears to be best insured by the application of disciplinary methods by a parent who is warm and loving.

Finally, the sacrifices of one family member for another, or of a lover for his mate, are expected to exceed those in other relationships. Indeed Friedrichs (1960), examining the effect of in-group affiliation on altruism,

found that more altruism was directed toward in-group recipients than out-group recipients. Campbell (1965) demonstrated that in-group sacrifice was common in the face of out-group threat, and Feldman (1968) found that Parisians and Athenians were more willing to give direction to compatriots than foreigners, but Bostonians treated everyone the same. Bostonians, however, were less likely to mail an unstamped letter for a foreigner than a compatriot. Hornstein, Fish and Holmes (1968) noticed, with American subjects, that fewer wallets were returned to their owners when the finder who had found and relost the wallet was foreign than when they thought the previous finder was not foreign. Thus, it seems clear that in-group affiliation increases altruism, even though friendship relationships and interpersonal attractiveness are only weakly related to altruism. Warm and loving parents also appear to increase the chance that their progeny will be altruistic.

4...Social Roles and Social Class

In addition to friendship status and in-group affiliation a number of other social roles have been investigated; these include (1) prescribe role, (2) social class and (3) nationality. Although the latter is not usually thought of as a social role, it will be discussed here since it is commonly found in the same studies in which both social class and international differences have been assessed.

Darley and Latané (1968) made an attempt in one of their experiments to vary the prescribed role of bystanders who were perceived to be present. The subject was told that the other bystanders were either a male, a female, or a premedical student who worked in the emergency ward of a hospital. The authors expected the least social responsibility or the strongest "diffusion of responsibility"¹ to occur when the other bystander was a premedical student trained to deal with emergencies. The results, however, did not confirm their expectations. They tentatively explained the disconfirmation of their hypothesis by pointing to the type of intervention required in the emergency they manipulated. In order to help, the subject had to report the emergency to the experimenter; he did not have to provide direct aid. Thus, the medical training of one of the bystanders was irrelevant in determining the capability of that person to intervene. Bickman (1971), however, has shown that bystander's ability to help affects the acceptance of responsibility. The capability of a person to help in a situation, i.e. special knowledge or training relevant to aiding in a given emergency, was shown to affect that person's helping behaviour. Furthermore, Ross (1971) and Ross and Braband (1973a, 1973b;) recently found that subjects responded to

1.. A term Darley and Latané use to mean that less responsibility for action is assumed by a person when he perceives that others are also present and it is therefore also their responsibility to act.

an emergency more rapidly when children were present than when adults were present, and subjects paired with a blind person responded to an emergency which threatened them as frequently and as rapidly as subjects who were alone. They also found that direct assignment of responsibilities increased intervention. However, should a bystander believe another observer is apt to be more capable in dealing with the emergency, as would be the case if one of the onlookers is a doctor and the distressed individual is in need of medical care, then the bystander usually defers to such a person (Schwartz and Clausen, 1970; Tilker, 1970;). Pertinent here is the observation by Form and Nosow (1958) that among the characteristics of effective helpers during the Flint-Beecher Tornado were a high degree of technical competence and prior experience with disastrous occurrences.

Membership in a social class has also been investigated to see if it affects helping behaviour. Berkowitz and Friedman (1967) suggested that entrepreneurs are influenced by the norm of reciprocity and the bureaucrats are influenced by the more altruistic prescription of the norm of social responsibility. As expected they found that entrepreneurial middle-class boys were most likely to think that "supervisors" would expect them to work hard after they received prior help. They were also most likely to help less after receiving a small (versus large) amount of prior help.

Members of the bureaucratic middle class and members of the working class produced the same amount after receiving a little help and a lot of help. The findings relating to the working class, though, are not in strict accord with the findings of other studies. A study by Almond and Verna (1963) found that in the working class, the positive value of generosity and considerateness increased with education, and Kohn (1959) suggested that the working class is more concerned with immediate consequences of their children's behaviour than the inculcation of abstract moral principles. These two studies imply strongly that members of the working class are not oriented to social responsibility as Berkowitz and Friedman (1967) would have us believe. More in accord with these investigations are the results of another study by Berkowitz (1966; 1968;) in which working class boys from Oxford, England were found to work hardest for those who had previously helped them, especially when their helpers came from a different social class. Bureaucratic middle-class boys acted, however, in accord with the norm of social responsibility.

Finally, only two investigators (Berkowitz, 1966; Feldman, 1968;) have tested for international differences in altruism. Berkowitz (1966), while recognizing the difficulty of creating comparable cross-national experimental situations, found some evidence that boys from the lower socio-economic class in Oxford, England are more reciprocity oriented than

their Madison, Wisconsin counterparts. No general differences in altruism, however, were found between countries. Feldman (1968) also reported differences among the reactions of Bostonians, Parisians, and Athenians to requests for aid. Although it made little difference to Athenians whether the letter contained a stamp or not (their rate of refusal was so high), Parisians and Bostonians were much less likely to mail a letter when it was unstamped. The fact that no real trend appeared across experiments in Feldman's study seems to indicate that altruism is largely a function of the specific situation, with people from different countries reacting more or less altruistically according to the circumstances surrounding requests for help.

5...Demographic Variables

Among the demographic variables most often studied are age, sex, and family size.

Age: a certain measure of support has been provided for the existence of a positive correlation between altruism and age in children. Examining altruism in the first three grades, three studies have found evidence for a developmental increase. Midlarsky and Bryan (1967) found that first graders who were exposed to expressive cues gave less than second, third, and fourth graders. Staub and Feagans (1969) found an increase in helping in an emergency situation from kindergarten to the second grade. Ugurel-Semin (1952) also reported an increase in generosity from age 6 to 8.

Only one study (Floyd, 1964) failed to find an increase in sharing from the first to the third grades.

Moving to the third, fourth, and fifth grades, additional support for a developmental advance in altruism is obtained. Ugurel-Semin (1952) found that the number of children who demonstrated selfish responses virtually ceased after age 8. Handlon and Gross (1959) found that the number of pennies or seals given to a partner increase from kindergarten to the fourth grade. A further increase occurred at the fifth grade, and leveled off at the sixth. Similarly, Midlarsky and Bryan (1967) observed that the number of self-sacrificial responses made by third and fourth graders in a control condition exceeded that made by first and second graders. Finally, Harris (1968) found that fifth-grade children gave more to charity in a control condition than fourth-grade children.

Although the evidence from most studies support a developmental increase in altruism, studies which have used generous models have usually failed to find the age-dependent increase in altruism (Midlarsky and Bryan, 1967; Aronfreed and Paskel, 1968; Harris, 1968;). Models appear to influence younger children more than older children and thereby counter the effect of developmental increase in altruism. In studies using adults as subjects, the relationship between age and altruism has been unclear. For instance, a large proportion of blood donors are young, as opposed to older,

adults (London and Hemphill, 1965) but Sorokin (1950) discovered that more middle-aged people tended to be among those perceived as "good neighbors" than either the young or the old.

Sex: although the common notion that females are more altruistic than males was supported by research more often than not, especially with children, this support has by no means been consistent. To quote Krebs:

"Of the 17 studies that examined children of both sexes, 11 found no sex differences. Of the studies which found sex differences, only 2 reported main effects that approached significance ($P < .10$). The remaining studies reported only interaction effects (1970, p.288)."

No studies found sex differences in altruism for nursery school children (Fisher, 1963; Gewirtz, 1948; Hartup and Keller, 1960; Murphy, 1937;). Of the studies which used elementary school children of both sexes, those of Handlon and Gross (1959), L.Harris, (1967), M.Harris (1968), Shure (1968), Staub (1968), Ugurel-Semin (1952) and Wright (1942) failed to find sex differences in altruism.

In the other studies which used elementary school children, some found a greater incidence of altruism in boys than girls (Rosenhan and White, 1967; Bryan and Walbeck, 1969; Staub and Sherk, 1970;) and some found the reverse (White, 1967; Grusec and Skubiski, 1971). Thus, it is apparent that there are no clear trends in the conditions which affect sex differences in altruism in children. Similarly, most studies

on adults have failed to find sex differences in altruism (Berkowitz, Klanderma, and Harris, 1964; Blake, Rosenhan, and Duryea, 1955; Bryan and Test, 1967; Hornstein, Fisch and Holmes, 1968; Rosenbaum and Blake, 1955). A series of studies by Schopler and his colleagues, though, found consistent sex differences in low-cost dependency-elicited helping. Schopler and Bateson (1965), Schopler and Matthews (1965), and Schopler (1967) found that although females were most likely to volunteer for an unpleasant experiment when the solicitor was highly dependent, males were most likely to volunteer when he was of low dependency. Berkowitz (1967) who failed to find sex differences in three experiments, achieved the effect in a fourth experiment. Males failed to show the customary increase in productivity for the dependent supervisor, whereas in agreement with Schopler, the females did.

Thus, overall, sex differences in helping are rare and when they appear it is mainly through interaction with other variables, such as dependency.

In summary, the findings relating to the effects of social roles and demographic variables of benefactors indicate that sex, age, social class, and nationality sometimes affect altruism. Although no clear sex differences were found for children, adult males were found to be less prone to help a highly dependent other, while females, on the other hand, were more prone to help such a person. A fairly consistent

increase in altruism was found with age in children. No general differences in altruism were found between countries, but there was evidence of social class differences. Finally, when a bystander possesses a special ability to help, such as a doctor in a car accident or a lifeguard in a drowning case, there will be an increase in the probability of intervention, but if others know of the presence of a qualified bystander, their own helping rate will decrease substantially. This is not surprising in view of the fact the victim is being attended to by an expert. Although not mentioned above, some evidence suggests that children from large families are more altruistic than children from small families (Ribal, 1963; Ugurel-Semin, 1952;) but that other-than-only children are not more altruistic than only children (Friedrichs, 1960; Handlon and Gross, 1959; L.Harris, 1967;).

Summary

In this chapter, we have briefly reviewed some of the main factors which have been explored in relation to helping behaviour. Trait studies generally have found that altruists were well adjusted and sociable, but the validity of the measures of altruism can be questioned. Studies which have employed behavioural measures of altruism were less likely than studies which used rating-scale and paper-and-pencil measures to find trait correlates. With regard to social roles and demographic attributes, several trends appeared;

although altruism did not consistently relate to sex in children, adult males were found to act less altruistically toward highly dependent others, and females acted more altruistically toward such dependent persons. A fairly consistent increase in altruism with age was found in children and there was some indication that people from large families were more altruistic than those from small families. Social class differences were also reported, but no international differences have yet been convincingly demonstrated. A variety of social norms pertaining to the elicitation or inhibition of helping behaviour were reviewed but their status as explanatory concepts remains in doubt. Modeling predictions, unless contradicted by the social context, were found to be relatively accurate, although limited in their generality.

As will be discussed more thoroughly later, some of our own results, related to the class of variables presented in this chapter, are inconsistent with some of the results summarized here. These findings will be mainly presented in appendix II.

In conclusion, we should keep in mind as Krebs points out, that:

"Philosophers were originally concerned with altruism because it related in an essential way to the nature of man. Although the methodology of current researchers is different, and their focus more specific, they are, in the final analysis, also trying to understand human nature (1970, p.298)."

Chapter III

A review of the effects of success and failure, positive and negative affect and related manipulations on helping behaviour.

A) Introduction

There is a rapidly growing volume of research on altruism related to psychological state variables, probably because these are somewhat easier to manipulate in laboratory experiments.

Psychologists have long been interested in the experience of success and have observed that its public and private consequences are far-reaching (Isen, Horn and Rosenhan, 1973). To be successful for example, is to expect further success (Feather, 1966) and to see the impact of that experience on a variety of one's performances (Rotter, 1954; 1966;). To be successful is to feel free to reward oneself, both contingently (Kanfer and Marston, 1963; Isen, 1966; Masters, 1972;) and noncontingently (Mischel, Coates and Raskoff, 1968; Masters and Peskay, 1972). Finally, as will be pointed out in this chapter, being successful seems to be associated with being kind to others (Berkowitz and Connor, 1966; Isen, 1970).

Thus, in short, success appears to be a complex

experience which influences our expectations, our actions, and our interpersonal interactions.

Therefore, this chapter, will review the effects of temporary psychological states such as positive and negative affect, success and failure, competence, self-esteem, guilt feelings, transgression and moods on altruism, - variables much more closely related to the specific topic of this research than those discussed in the previous chapter.

In general, positive affective states have been induced by creating experiences which involve success and the perception of competence. On the other hand, negative affective states have been created by supplying experiences which involve failure, unintentional harm to another, and acts of transgression. As will be seen in this chapter, both of these manipulations can, under certain circumstances, increase subsequent altruistic behaviour. The task here therefore will be to specify these circumstances.

After summarizing the influences of affect and moods on altruism, the effects of transgression and the evidence on reparative altruism will be presented. Subsequently, the effects of success and failure will be reviewed.

B) Affects and Moods

How positive and negative feelings affect helping and sharing behaviour is a question that has received considerable attention recently. Good and bad feelings

mainly have been induced through experiences of success and failure as will be seen later. However, they also can be induced in other ways or manipulated directly and it would be interesting to determine if different manipulations produce effects similar to those found through experiences of success and failure.

It could be argued that when people feel good, material resources which are often a source of positive feelings in our culture may be less important to them, thus increasing their willingness to share. On the other hand, when individuals feel bad they might be more concerned about themselves, less oriented toward others (Berkowitz, 1970), and thus less willing to help. Similarly, manipulations designed to induce high and low self-esteem either temporarily or more permanently as in the case of depression, might also be expected to produce equivalent effects. The evidence, however, is not particularly clear cut.

Several recent studies have indicated that manipulation of the affective state in ways other than via success / failure results in differential helping, thus lending credibility to the hypothesis that a relationship between feeling good and helpfulness does exist. Two naturalistic experiments indicated that a good feeling aroused through positive verbal contact resulted in increased aid, both solicited (Berkowitz and Macaulay, as cited in Aderman, 1971) and unsolicited (Isen, Becker and Fairchild,

as cited in Isen and Levin, 1972).

Studies by Aderman (1971) and Aderman and Berkowitz (1970), conducted in a laboratory setting, manipulated mood state in several novel ways. In the Aderman and Berkowitz (1970) experiment, the subject's mood state was varied by having him observe one of several interactions between two college students, one of whom needed aid and one who was a potential helper. The experimental condition varied according to the person with whom the subject was instructed to empathize, the helping response of the second person (helped or did not help), and the reaction of the helped person (thanked the helper or did not). The subject then filled out a mood questionnaire and finally was given an opportunity to comply with the experimenter's request for help. The results of the experiment, though complex, tended to support the idea that feeling good is related to increased helping, under some circumstances (empathy with the thanked helper), while feeling bad is associated with increased helping under other circumstances (empathy with the nonhelped person in need).

In the study by Aderman (1971), elation or depression was induced in subjects by having them read sets of mood statements. Aderman (1971), found that following the reading of the cards, subjects in elation condition wrote more numbers for the experimenter, when this task was presented as a favor rather than as a requirement of the experiment. In addition, elation subjects volunteered for a future

experiment more often.

Isen and Levin (1972) carried out two experiments with adults in which the effects of a person's positive affective state on his or her subsequent helpfulness to others was measured. "Feeling good" was induced by having received cookies while studying in a library (study 1) or by having found a dime in the coin return of a public telephone while making a call (study 11). The results supported the prediction that subjects who were made to "feel good" would be more helpful than control subjects. However, no manipulation check in either study was administered. Thus it is possible that the subjects were just reciprocating the good gesture to a third party. The evidence concerning the existence of a motive to reciprocate is quite adequate and has already been presented under the norm of reciprocity in the previous chapter (e.g. page 29-32).

More recently, Moore, Underwood and Rosenhan (1973) investigated the relationship between affect and altruism in 7 and 8 year old middle-class white children. Children were asked either to think of things that made them happy or sad, or they were assigned to control conditions. Subsequently in the experimenter's absence the children were given an opportunity to donate money to other children. It was found that children who experienced positive affect gave more than the control subjects while those who experienced negative affect gave less than the controls.

However, it should be mentioned that the children were given an opportunity to share their "earning" with other children who would not be able to participate in the experiment, and furthermore, from the instructions given to the subjects, it is possible that the children thought that only the amount they were willing to share would be distributed to the other children. The instructions stated:

"Some of the children in the school are going to get a chance to help us and some aren't. We are going to give some money to the kids who don't get to come. Later, when I leave the room you can share some of your money with the other kids by putting it in that can if you want to. But you don't have to. Just do what you want to (Moore, Underwood and Rosenhan, 1973, p.100)." (underlying is ours)

In another experiment (Underwood, Moore and Rosenhan, 1973) using the same direct induction of moods, children were given an opportunity to help themselves to money. It was found that children in both "happy" and "sad" conditions self-rewarded more than controls- an indication of a possible self-therapeutic tendency after feeling sad-and children in the "happy" condition were found to self-reward only slightly more than children in the "sad" condition. The difference was not significant. Thus, feeling sad can be as effective as feeling good or happy in leading an individual to indulge in self-gratification. It is interesting to notice that even for the boys among whom the effects were stronger, no difference emerged between negative-affect and controls.

Further evidence of the existence of a self-therapeutic tendency following failure or negative affect will be presented in the next section of this chapter.

Rosenhan, Underwood and Moore (1974) replicated their findings concerning affect and altruism. With regard to negative affect, their results indicate that it may lead to a self-therapeutic process which takes the form of non-contingent self-gratification and that it induces a tendency to conserve resources. With regard to positive affect, the findings confirm again that happiness promotes both self-gratification and kindness to others. It is interesting to note that in this study, the authors found that negative-affect subjects who self-gratified the most gave least away, and those who self-gratified the least gave the most away.

A major criticism of all the foregoing studies of the relationship between affect and altruism, is that experience such as feeling good and good fortune give rise to psychological states that involve more than a single pleasant-unpleasant dimension. Thus, it has been argued, for instance, that individuals who experience good fortune are more helpful because they wish to restore equity (Adelman, 1972). A study by Bleda, Byrne and Smith (1974) attempted to eliminate potentially confounding dimensions of feelings by using instrumental music to evoke differential affective states. Since personal feelings in their negative and control groups did not differ, these two conditions were combined

in the analysis of helping behaviour. The helping measure was whether or not the subject offered to help a confederate who was retrieving 150 computer cards in the hallway. Eye contact with the subject was avoided until the subject had either passed by or offered assistance. The results indicated that the relative frequency of helping found in the positive affect condition did not differ from that found in the combined negative and control group. These results again appear not to support previous data which have generally been interpreted as indicating a positive relationship between affect and altruism.

A study by Aderman (1972) attempted to induce elation and depression using the method developed by Velten (1968) in which subjects read a series of 60 positive and negative mood-graded statements. On a measure of volunteering for an unpleasant psychological experiment, Aderman found that more subjects from the elation treatment were willing to volunteer than were subjects from the depression treatment, but the relationship between the experimental manipulations and scores obtained on mood scales was much stronger. One possible reason for this outcome is that when we manipulate a person's attributions about himself, he will act accordingly. That is, if he is made to say that he is happy or sad then he will check happy or sad adjectives on the mood scales. This suggests only that the person's language behaviour is consistent and does not unequivocally indicate

that the person feels happy or sad. More likely it is a demand characteristic of the situation.

Two other studies are worth mentioning here. These deal with the effects of manipulated self-esteem on subsequent helping behaviour. Rudestam, Richards and Garrison (1971) found that situationally induced self-esteem did not affect subsequent altruistic behaviour. While 31% of the female subjects and 46% of the male subjects in the experimental groups offered to help a female passerby carry a bulky load of boxes, these figures did not differ from those of a control group. Isen (1970) as will be discussed later, suggested that after success, subjects will be kind to others. If this is true, we should expect the same thing after a manipulation of self-esteem. That is high self-esteem subjects also should be kinder to others. Walster (1965) on the other hand, suggested that low self-esteem people have a greater need for approval than do those with high self-esteem and therefore, low-self-esteem subjects should be motivated to take advantage of a situation which offers possibilities for gaining approval from another. Clearly, then, subjects' acceptance of a lower level of self-esteem should be least likely and their need to gain approval greatest when the situation indicates that something can be done to increase their own value. Based on these theoretical notions, Baron (1974) predicted that to the extent that lowering subjects' self-esteem increases their need for

approval or their need to ward off unfavorable evaluations, low-self-esteem subjects, when in a "mutual evaluation setting", should tend to evaluate an unknown other more favorably than high-self-esteem subjects in a similar situation. Although these arguments seem theoretically sound, Baron (1974) was not able to confirm them. Manipulated self-esteem was positively related to ratings of the other, but overall, subjects rated their partner more favorably in the bilateral than in the unilateral evaluation conditions. Thus, although the specific prediction concerning high and low self-esteem subjects was not substantiated, the findings indicated that people, in general, take advantage of an opportunity to gain approval. If direct altruism toward the partner had been a possibility in the experimental setting, more support for the prediction concerning high and low self-esteem subjects might have been obtained. In this regard, it is interesting to note that in a public condition in contrast to a private condition, low self-esteem subjects evaluated themselves more favorably than they did their partner, while in the private condition, they evaluated their partner more favorably than themselves. On the other hand high-self-esteem subjects and controls evaluated themselves more favorably than their partner in both public and private conditions but the tendency for a low-self-esteem subject to evaluate an unknown other less favorably was strong and persistent.

As Baron (1974) noted:

"perhaps people whose glass house has already been broken have little to lose by casting a stone or two at their neighbor's (p.109)."

In summary, the literature on moods and helping behaviour suggests that most of the research has been guided by the intuitively plausible assumption that a "successful" person will be happier than an "unsuccessful" person, and that a "happy" person will be more likely to help than an "unhappy" person. But, as Bem (1972) pointed out in another connection, it is just because not unreasonable assumptions are occasionally confirmed that their transparent theoretical status remains unchallenged. Wispe, Kiecolt and Long (in press) point out that it is far from clear why a happy person should be more likely to help than an unhappy person. Perhaps under certain conditions, unhappy person are more willing to help. Indeed, it was seen that Lenrow (1965), Staub (1968) and Aderman and Berkowitz (1970) have reported instances of increased altruistic behaviour under certain conditions of failure or negative affective states. Furthermore, many studies have found no differences between affective conditions. Kazdin and Bryan (1971) found no differences between competent and incompetent subjects in blood giving even though an opportunity was available in the same hallway as the experimental room within minutes after the experiment. Bleda, Byrne and Smith (1974) as well

as Rudestam, Richards and Garrison (1971) also found no differences in altruistic behaviour following manipulations of either moods or self-esteem. In two other experiments to be reviewed later (Berkowitz and Connor, 1966; Isen, 1970;) no differences in altruistic behaviour were found between negative-affective conditions and control conditions. Staub (1973b) more recently suggested that when children receive rewards following success and failure rather than prior to it, and are then asked to share them, those who succeeded feel that they earned and deserved their rewards to a greater degree than those who failed, and therefore, share less of them.

Thus, overall, it seems that either relationship (to help more after positive affect and to help more after negative affect) may hold under certain specific circumstances. The main reservation here is with the often implicit assumption that a happy person is more willing to render assistance than an unhappy person. Further support in favor of this reservation will be presented in the following section of this chapter.

C Transgression, Guilt-Feelings and Reparative Altruism

Many studies have found that failure which has a particular consequence, harm to another, leads to altruistic responses. Darlington and Macker (1966), for example, found that failure to correctly complete a paper-and-pencil task

resulted in more agreement to give blood when the failure hurt a helpful other than when it did not. These findings were interpreted as evidence for displacement of guilt-produced altruism. These results, however, must be viewed with caution. It was not until the third of three appeals for blood that any difference was found, and 13 subjects were discarded. But studies by Lerner and his associates demonstrated that partner-oriented altruism occurs in situations where success for self results in failure for another. Subjects who drew a slip of paper that assigned them to a control condition and their partner to a shock condition (fates interdependent) were more prone to comfort the other and to volunteer to take his place than subjects who determined only their own fate (fates independent; Lerner and Matthews, 1967) or subjects whose fates were determined by the experimenter (Lerner, 1968).

Other studies that did not involve success and failure have supplied further support for the notion of reparative altruism. Two such studies investigated the effect of compliance and unintentional harm-doing on altruism. Carlsmith and Gross (1969) reported that subjects who delivered shocks to another were more likely to volunteer to support a humanitarian project than those who did not shock another. Freedman, Wallington and Bless (1967) found also that subjects who knocked over a pile of index cards were more willing to volunteer for an experiment to help another than

those who did not, provided that the solicitor was not the owner of the index cards. In a similar situation, they found (1967) that subjects who harmed another were more likely to volunteer to help him if they did not expect to meet him than if they did. Wallace and Sadalla (1966) showed that individuals who broke an expensive machine were more likely to volunteer for a painful experiment than those who did not, but only if their transgression had been discovered. In a more recent experiment by Rawlings (1968), guilt was manipulated by shocking a subject's partner whenever the subject made an error. Presumably this experience would make subjects remorseful for the harmful consequences of their actions to their partner and motivate them to compensate for the harm to the original partner. Then, in a second part of the study, the subject was given an opportunity to partially alleviate the distress of a new partner by sharing the punishment. The guilt hypothesis would predict that subjects would behave altruistically, presumably in order to lessen their guilt feelings. As noted earlier, the treatment designed to arouse guilt feelings might also increase the saliency of the altruism ideal. In this study, an observation group that only saw shocks being delivered to another subject was included. The results indicated that the guilt group and the observation group were significantly more altruistic than both the shock and the nonshock control groups. In the shock group, both the

subject and his partner received a shock on every error, and in the nonshock group, neither of them were shocked. Thus while there is no evidence in this study to contraindicate the hypothesis that expiation was the motive behind the altruistic behaviour of the guilt subjects, the performance of the observation subjects suggests that merely witnessing the distress of a victim can have similar consequences for altruism.

Other more recent experiments further strengthen the thesis that guilt is a stimulus for altruistic acts in subjects who have caused harm. Regan (1971) explored the hypothesis that two separate mechanisms may lead to altruism after harm-doing: expiation of guilt and attempts to bolster belief in a "just world". For some subjects the experiment in which they were participating was ruined. Half of these subjects were led to believe that their negligence caused the misfortune; half that they were not at fault. As expected, subjects in both conditions contributed to a charitable fund more than controls, for whom no misfortune occurred. Furthermore, internal analyses of the data demonstrated that guilt is indeed an important source of altruistic acts in subjects who caused harm. Indeed, since the guilt manipulation was introduced while the subjects were distracted from a voltage monitoring task, the subjects were subdivided after the experiment into those for whom the experimenter suspected the manipulation to have been

successful (subjects who spent little time watching the voltage meter) and those for whom it was probably unsuccessful (subjects who watched the voltage meter steadily). The data obtained in this manner showed that those subjects who spent relatively little time watching the meter, and who therefore probably felt most guilty (the experiment was ruined because the subject did not perform the monitoring task properly), donated significantly more money to the fund than those subjects who watched the meter a lot.

A recent study by Aderman, Brehm and Katz (1974) examined the hypothesis that whether observer react to an innocent victim with compassion or rejection depends on their observational set and observational setting. Female subjects were alone or in small groups when they watched a videotape of a female victim apparently receiving electric shock upon making errors on a learning task. Prior to viewing the tape, the subjects received instructions designed either to induce or inhibit empathy or simply were told to observe the tape. It was found that the subjects who received the empathy-inhibiting or the observation instructions subsequently expressed strong derogation of the victim, but the subjects who received empathy-inducing instructions tended to rate the victim as more attractive than themselves. It was also found that subjects run individually expressed less relative derogation than subjects run in groups. Thus, this study shows once again that subjects who witness harm

to another, especially if it is in public, feel uncomfortable and if no opportunity to compensate the victim is given (as in this last study), they will resort to derogation of the victim, possibly in order to feel better. Additional evidence of the likelihood of derogation has been reviewed earlier (chapter II) in relation to equity restoration techniques.

In general, a number of these studies suggest that reparative altruistic behaviour relieves an unpleasant negative state associated with lowered self-esteem by supplying a situation in which a wrong can be righted and self-esteem elevated. Furthermore, as seen from the above research, it is possible that transgression elicits reparative responses in some situations by some people, and expiatory responses in other situations by other people. Further evidence on expiatory responses will be presented later.

D) Success and Failure

At the present date, to our knowledge, only eight studies directly tested the effects of success and failure, competence, or felt adequacy on helping behaviour. Berkowitz and Connor (1966) examined the hypothesis that success increases the salience of the "social responsibility norm", which leads to altruism toward dependent others. They found that success on a simple task resulted in greater effort on behalf of a highly dependent peer than did failure or no

experience at all. Success, however, did not lead to more helping on behalf of others of low dependency. Furthermore, an examination of the data indicates equivocal support for their hypotheses. For example, failure on a prior task did not reduce the person's efforts on behalf of a dependent supervisor in comparison to the effort expended in the control group (Berkowitz and Connor, 1966; table 2, p.667). In addition, as pointed out by Simmons and Lerner (1968), prior help elicited greater effort only on behalf of the person who had actually given the prior help and not for a third party (Garonson and Berkowitz, 1966; table 2, p.231). In their setting, where the subject had some kind of contractual relationship with the person for whom he was working, success appeared to enhance productivity. However, it leaves unanswered the question of whether success or failure affects behaviour in a noncontractual setting, one in which the person being helped is either not under such an explicit contract or is outside the situation. Neither does it answer the question of the effect of success or failure on helping behaviour toward a non-peer.

However, Lenrow (1965) and Staub (1968) have reported increases in altruistic behaviour under conditions of failure or under conditions which elicited negative affect. Staub (1968) has shown that children (fourth grade) who have failed are more willing than those who have succeeded on a previous task to share an extra candy with their partner.

The difference between the success and failure conditions was significant. However, the reverse was found for fifth grade children. It is interesting to notice that Staub's situation was noncontractual but that the partner was still a peer. Nevertheless, this cannot account for the developmental reversal found by Staub (1968). A relationship between competence and altruism also was observed by Midlarsky (1968a). Subjects who were told that they adapted well to electric shock (high competence) took more shocks for others than those who were told they adapted poorly. Unfortunately, the shocks were not of equal intensity across conditions.

A study by Isen (1970) is also relevant in this context. Isen predicted that subjects who succeeded would experience a "warm glow of success" which would subsequently lead them to be helpful, generous, and friendly to others. The experimenter indeed found that success subjects donated significantly more money than failure subjects to a "Junior High Airconditioning Fund" introduced by a female experimenter. It was also found that subjects who had succeeded were significantly more helpful (picking up a book that a female confederate dropped as she passed by the subject on her way out of the door) than those who had failed. In a final study these findings were replicated with a student sample but for the first time a control group was included which did not perform the tasks. Instead they were asked to

estimate the difficulty of the tasks. The results indicated that the success group had the highest mean helping score, and that the failure group was lowest, with the control group intermediate. The success group differed significantly from both the failure and the control groups, but these two groups were not significantly different from each other. Finally, only in the success group of this final experiment, was there a tendency for males to be more helpful than females.

A later study by Kazdin and Bryan (1971), in which, in contrast to Midlarsky (1968a), the cost of helping was controlled, found essentially the same result. Subjects who were told they were highly competent on tasks which were both relevant and irrelevant to the dependent variable offered to donate more blood than those who were told they were incompetent. The notion that a temporary state mediated the altruism was supported by the fact that very few volunteers followed through their commitment to give blood. As Krebs (1970) points out, once they had a chance to recover from the positive experience it would appear that their altruistic inclinations decreased drastically.

A more recent study by Isen, Horn and Rosenhan (1973), using children, replicated the finding obtained with adults (Berkowitz and Connor, 1966; Isen, 1970;), that success leads to greater generosity than when no positive affect is induced. Since this research was published in the midst of the present

research and since it is somewhat supportive of one of the hypotheses under investigation in the present research, it will be discussed in more detail later when it will be more pertinent.

Finally, Morris and Rosen (1973) have shown that felt inadequacy inhibits help seeking behaviour. Thus, not only does it appear that competent people are more helpful to others, but incompetent ones seem to be reluctant to seek help.

As can be seen, success generally leads to helping behaviour, but this finding is not unequivocal. Indeed Staub (1968) found in one instance that failure subjects helped more than success subjects, and Lenrow (1965) reported a similar observation. Part of our research includes an attempt to integrate these conflicting results.

F) Summary

At the beginning of this chapter it was pointed out that experiences of success and failure have a variety of consequences on our daily behaviour. Apparently there are important ramifications on our expectations and our actions as well as our interpersonal interactions.

Subsequently it was seen that the evidence generally supports the prediction that success leads to altruism. This support, however, is not as unequivocal as some investigators have claimed. In fact, in some studies the

opposite finding was reported. A similar state of affairs also holds for the relationship between affect and altruism with some research indicating a positive relationship, some no relationship, and a few studies suggesting a negative relationship under certain circumstances.

Finally, failure and success that cause harm to another and acts of transgression were also shown to sometimes result in altruistic behaviour. Early evidence did not make clear why this occurred with some investigations indicating a compensatory or reparative motive. This last possibility was explored more thoroughly in the final section of this chapter and although the evidence again is not unidirectional, it is by and large supportive of the existence of an expiatory motive, especially if an opportunity to gain approval is present. In fact, the two motives, expiation and reparation, may occur simultaneously in any given subject.

It is anticipated, as the reader progresses through the next few chapters, that the relevance of the material included in this chapter will become increasingly evident.

Chapter IV

General methodology of the research

A) Introduction

The purpose of the research reported in this dissertation is to investigate experimentally the effects of success and failure on helping behaviour. As the review in the previous chapter indicates, a good deal of the evidence on this topic is conflicting and further investigation is obviously needed. Some of the evidence suggests that success leads to altruism (Berkowitz and Connor, 1966; Midlarsky, 1968a; Isen, 1970; Kazdin and Bryan, 1971;) while other evidence suggests that failure leads to altruism (Lenrow, 1965; Staub, 1968, 1973b;). Our goal is to attempt to reconcile these apparently conflicting results.

All experiments reported in this thesis were conducted between November 1971 and December 1974. The experimental design most frequently used during this period will be described in detail in this chapter. Minor changes in the general procedure have sometimes been made from one experiment to the next and will be indicated at the beginning of each individual experiment. The rationale underlying the changes will also be discussed at that time.

12.

Briefly stated, the subjects throughout these experiments were unobtrusively made to succeed or fail on a motor task or were assigned to control conditions. The task most frequently used is described in the apparatus section of this chapter. Subsequent to their performance on this task, subjects were requested by the experimenter to volunteer for additional experiments and after the completion of this part, the experimenter, using a subterfuge, asked the subject to sort a number of sheets as a favor to him. The experimenter recorded the length of time the subject spent sorting sheets. The number of hours volunteered for additional experiments as well as the number of sheets sorted and the length of time spent on this last task were the main dependent measures of helping behaviour.

It may be appropriate here to briefly discuss how these measures are different from what is commonly called compliance responses. Generally, compliance refers to a frequency measure of the yes-no type. A person does or does not comply. There is no degree or gradation involved in the measurement of compliance behaviour. Our dependent measures of helping behaviour to the contrary, are all taken at either the ordinal or the interval level of measurement.

Now that a general idea of the paradigm used have been created in the reader's mind, let us review more thoroughly all pertinent details of the methodology employed.

B) Subjects and Experimenters

The majority of the subjects were first year students attending McMaster University. In most of the studies, male subjects were used, although a few of the experiments included females as well. Generally, and unless otherwise mentioned, subjects were selected at random from the student directory, contacted by telephone and asked to participate in a one-hour psychological experiment. In most cases, subjects were told that they would be paid at the rate of \$2.00 an hour for their participation.

In view of the fact that helping behaviour is of primary interest, it may seem that volunteer effects are particularly important. However, ethical considerations pose a serious problem of unduly infringing upon individual freedom and possibly causing unwanted reactance effects as documented recently by Brehm (1966).

For these reasons no subject was ever put under any pressure to participate. In addition, since participation was forthcoming in most instances and all subjects who showed up were randomly assigned to experimental conditions and the contrasting effects of these experimental conditions are the subject of our interest, volunteer effects do not seem, in these studies, to be a serious problem.

Subjects were not used in the experiments if they had already taken part in other social psychological experiments. In the first few studies to be reported, the

writer was generally the experimenter. In subsequent investigations, different experimenters of both sexes were sometimes used. Finally, when two experimenters were needed for specific experimental purposes, which will be explained later, the writer was generally one of them and the other experimenter was of a comparable age.

C⁶) Experimental Task

Since subjects ideally should be randomly assigned to the different experimental conditions, it was necessary to find a single task which would allow success, failure or control to be accurately manipulated without the subject's awareness. To accomplish this, it was thought that the selected task should be somewhat new to the subject so that he was unlikely to have any preconceptions regarding his ability to perform it. In addition, since we wanted to deliberately control the subject's performance level on the task, ethical principles suggested that the task should not be too important to the subject; this of course reduces the potential impact of the manipulations, but it was felt necessary nevertheless. If the effects could be demonstrated using weak manipulations, it was felt that this would undoubtedly further strengthen the case presented. A task that accomplished these requirements would also avoid strong ethical criticisms and would greatly reduce the need for extensive post-experimental debriefing. Nevertheless, the task had to clearly convey to the subject a definite

impression as to whether his performance level was superior, inferior or simply average. It also was necessary for the task to allow multiple trials so that the experimenter could deliberately vary the level of success and failure.

Experimental control of the outcome on every trial was of outmost importance for the following reasons: first, it was necessary to assign subjects randomly to conditions so as to distribute uncontrolled and unknown previous experiences equally in the different treatments; secondly, control of outcome was important because suspicion on the part of the subjects could be substantially reduced if not completely eliminated by making the subjects achieve somewhat different levels of performance on successive trials, whenever possible.

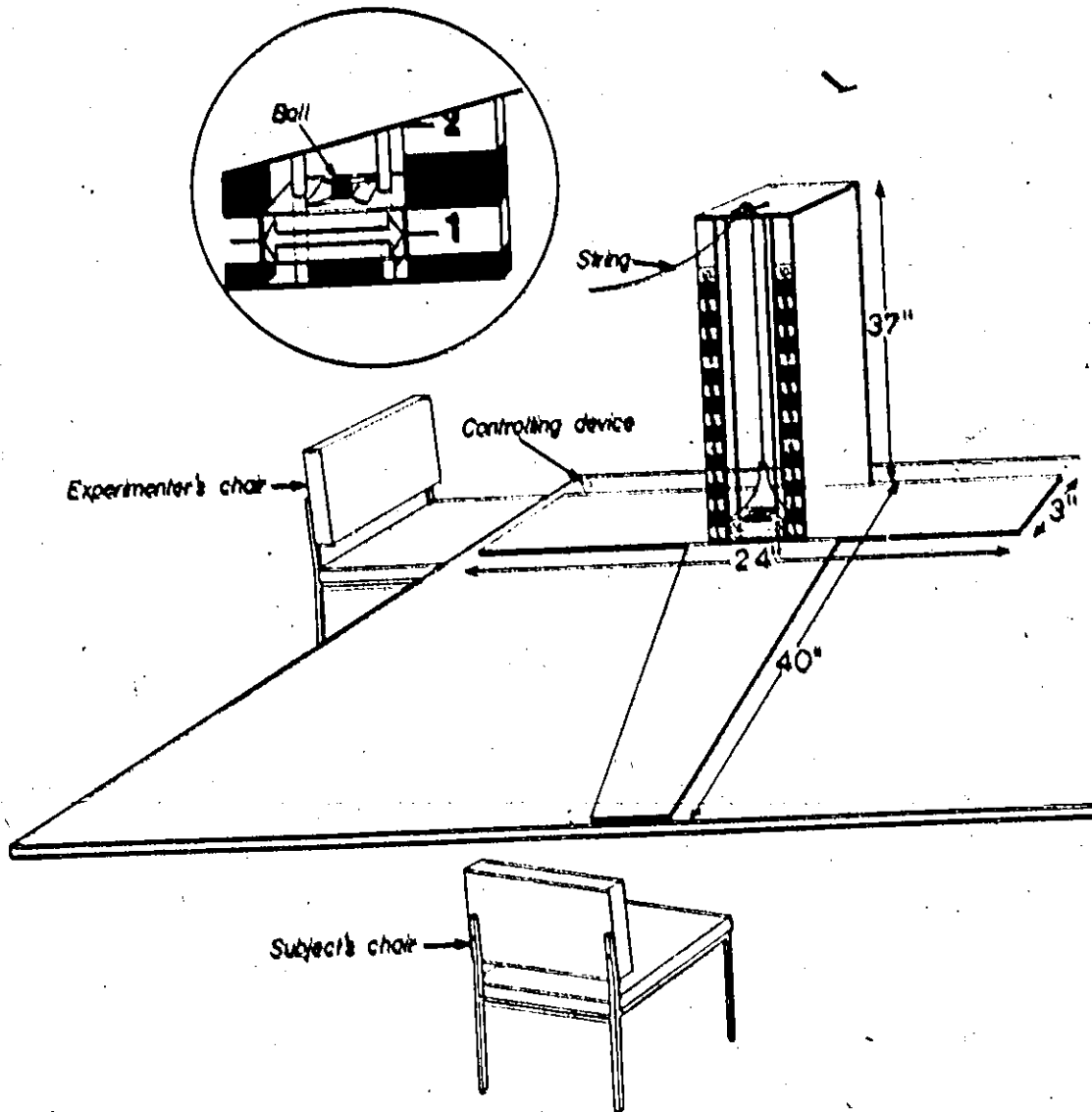
D) Apparatus

The apparatus selected was the vertical aspiration board originally designed by Sky (1950) and subsequently modified by Cromwell (1959) and Rotter, Liverant and Crowne (1961). It was further slightly modified for the specific purposes of the present research. The apparatus and the experimental setting with the experimenter's and subject's positions relative to each other can be seen in Figure 1. The dimensions of the apparatus are also indicated (in inches).

 Insert figure 1 about here

Briefly described, the apparatus consists of a platform which is raised vertically along a graduate scale by

FIGURE 1
MOTOR TASK APPARATUS AND SETTING



pulling a cord. A steel ball is placed upon the platform, and the subject is instructed to raise the platform as high as possible without the ball falling off. The ball is held on the platform by an electromagnet which can be switched on and off without the subject's knowledge by a silent switch situated beneath the table top. By appropriately deactivating the magnet any score can be delivered to the subject and yet be perceived to be the result of the subject's own effort. The probability of success when the electromagnet is off is zero, that is, the steel ball cannot stay on the platform without the magnet being on.

A trial always started with the ball being placed by the experimenter on the platform situated in position number one (1) on the vertical scale, and it was terminated in one of two ways. Either when the ball fell off the platform somewhere along the vertical scale, or when the platform reached the top of the vertical scale with the ball still on it. Throughout the studies in which this apparatus was used, a successful trial was defined as a trial on which the subject managed to pull the platform to the top of the vertical scale without the ball falling off and a failure trial was any trial on which the ball fell off the platform somewhere between positions one and ten along the vertical scale.

Pretesting of the motor task, using both graduate and advanced undergraduate psychology students, since they

presumably would be more sensitive to experimental manipulations and control than would be randomly selected first year undergraduates, established first, that almost none suspected experimenter control; second, that the task was viewed as interesting and challenging to most of them (they obviously tried hard to succeed); and finally, that it was not too important to the subjects, thereby reducing the possibility of causing unwanted harmful after-effects. In fact when debriefed and asked if they thought a debriefing period seemed necessary for ethical reasons, all protested subjects said "no", and furthermore most argued that it would be more detrimental to the subject if debriefing was included. In support of this position, the argument most commonly used was that the subject, after debriefing, would look and feel naive and foolish to have been tricked so easily and this would be much worse than to have failed on a somewhat unimportant motor task. Some pilot subjects volunteered the extra information that if the task was much more important to the subject, an I.Q. test for example, then debriefing would be appropriate. Finally it was felt that debriefing would substantially increase the probability that a subject would talk to friends about it which, if widespread, would render it almost impossible, on practical grounds, to carry out the experiments.

E) Procedure

When a subject arrived at the laboratory, he was

asked to sit at a table and to read the following instructions along with the experimenter:

Instructions

Listen carefully while I read these instructions over with you. This experiment is designed to study the relationships between responses on three different questionnaires and performance on a simple motor task.

First, you will be given two of these tests to complete and then you will do the motor task.

In order that you may evaluate your own performance on the motor task you may like to know that we have found that high school students achieve on the average 6 perfect trials out of 10.

It is well known that motor ability improves with age so you should do somewhat better than that.

Before you begin the motor task you will be allowed 2 practice trials and then I will ask you to predict how many perfect trials you think you will achieve out of the total 10 trials.

After you finish the motor task you will be given the remaining questionnaire to complete at home if you want.

If you accept, it will be important that you work on this questionnaire tonight and only between 10 and 11 o'clock. This is important because we don't want some people completing this questionnaire when they are tired, while others do it when they are not.

We will be running this experiment for two days so I would appreciate it if you would return this questionnaire to me the day after tomorrow, that will be _____.

However, be sure to complete it tonight between 10 and 11 p.m. since fatigue is a crucial factor in this experiment.

Do you have any questions?

Next the subject was given two personality questionnaires to complete. These questionnaires, presented in appendix I (parts A, B, C) were used mainly to implement the cover story or the false description of the purpose of the study as outlined in the instructions. As Aronson and Carlsmith (1968) point out:

"It is important to realize that providing the subject with a false, but credible, hypothesis is a much better procedure than providing him with no hypothesis at all. For if there are loose ends to an experimental procedure, the subject will attempt to tie these up by devising his own hypothesis, which may be identical to or very similar to the experimenter's true hypothesis. If the experimenter can tie the loose ends together for the subject by providing him with a plausible hypothesis which is unrelated to the true hypothesis, he may succeed in satisfying the subject's curiosity and may thereby eliminate this source of bias. Indeed, this is the primary advantage of the use of deception in experiments. This procedure is really an attempt to provide a cognitive analogy to the placebo; all subjects receive identical explanations of what is being done, just as all subjects receive identical pills in placebo procedure (p.63)."

While the subject complete the questionnaires, the experimenter was obviously involved in trying to finish reading a long article. After the subject had completed the questionnaires the experimenter introduced the motor task to the subject in these words:

"This is the motor task (pointing to the apparatus). I will put this ball on top of this platform and all you have to do is to pull this string up to 10 without the ball falling. I will first give you two (2) practice trials and after I will

ask you to predict how many perfect trials, that is, all the way up to 10, you think you will achieve out of 10 trials. Then you will do the 10 trials. Do you have any questions?" (All questions were answered by rephrasing appropriate parts of the instructions).

It is important to mention at this point that the number of practice trials as well as the number of trials were varied from one experiment to the next. Our definitions of success and failure also varied, sometimes being a fixed number of perfect trials, say four (4) out of ten (10) trials for the failure condition, or eight (8) out of ten (10) trials for the success condition, and sometimes it was a certain number of perfect trials dependent upon the subject's prediction of his performance established after the practice trials. As the subject performed the task, the experimenter recorded (shown appendix I, part D) the subject's performance on each trial. In the first few experiments, subjects in the control groups did not work on the motor task but instead completed a third questionnaire (see appendix I) which took as long to complete as the motor task. In later studies, the control subjects performed the motor task but were made to achieve an intermediate performance level.

After the completion of either the motor task or the third questionnaire, depending on the condition and the experiment, all subjects were given the remaining questionnaire to complete at home that same night between ten and eleven o'clock. Then all subjects were presented with a

sheet on which they could volunteer for additional experiments. This volunteering sheet (shown on the next page) was introduced by the experimenter in the following manner:

"This (showing the sheet) is actually not part of the experiment; it is just a fine way for us to find some subjects for some other experiments we will have this year. All you have to do is to read the instructions and decide if you want to participate in any of these experiments (showing the eight different experiments listed on the sheet). All you do is check here (showing first column on the sheet) the experiments you want to take part in, and here (showing the second column on the sheet) you write the amount of money you would like to receive for your participation. The amount of money however must be within those two bounds (showing boundary limits on the sheet)."

An example, using the ten minute experiment, was explained verbally to the subject in order to make sure he understood how to complete the sheet. The experimenter then continued:

"the weak experiment (showing the last one on the list) will of course be conducted during the summer but all others will be conducted sometimes this year. You can check as many experiments as you want or none if you don't want. Can you read the instructions and fill it out now please? Thank you."

After the subject had completed this volunteering sheet or expressed to the experimenter that he was not interested in participating any more, the experimenter thanked him, and faking embarrassment and hesitation (a few seconds went by), the experimenter told the subject:

Given to all groups

As well as myself there are many others in the department of psychology who will require people to act as subjects in their experiments over the next few months. It would help us a great deal, and myself in particular, if you would agree to participate in additional experiments.

Here is a list of experiments which we intend to carry out. Will you check those in which you would be willing to participate.

You will notice that there are two columns. Use the first column to indicate your willingness to participate. In the second column indicate the amount of money you would like to receive for your assistance. This amount must be within the limits indicated below the parenthesis.

(1) a ten minute experiment	()	()	\$0.00-\$1.00
(2) a twenty minute experiment	()	()	\$0.00-\$1.00
(3) an hour experiment	()	()	\$0.00-\$2.00
(4) a two hour experiment	()	()	\$0.00-\$4.00
(5) a four hour experiment	()	()	\$0.00-\$8.00
(6) a full day experiment	()	()	\$0.00-\$16.00
(7) a full week-end experiment	()	()	\$0.00-\$32.00
(8) a week experiment	()	()	\$0.00-\$80.00

Please write here: your name:

telephone number:

room number:

Thank you very much

"I am sorry to bother you again but I have a problem that I think you might be able to help me with (a few seconds went by again). I have to finish reading this long article (pointing to the article he was reading while the subject completed the personality questionnaires and the volunteering sheet) within one hour because I have to report on it and I also have another subject coming for another experiment and the material (pointing to three piles of sheets with different designs on them situated on the table next to the motor apparatus) is not quite ready and I wonder if you would help me with it?"

After a few seconds of hesitation, the experimenter continued:

"O.K., I will tell you the purpose of this experiment, (showing the three piles of sheets) but I will ask you not to talk about it to anyone, O.K.?"

Then an elaborate and plausible purpose of the experiment was explained to the subject (approximately three minutes long) and finally the subject was requested to help as follow:

"All I need you to do is to put the sheets like this (shuffle demonstration). It isn't necessary to do them all, only as many as you want. You can stop and leave whenever you wish. Thank you very much".

Just before the subject started to work on this task, he was paid (unless otherwise indicated) \$1.00 for his participation in the experiment (a little less than half-an-hour) and the experimenter pointed out clearly to the subject that unfortunately he would not be paid for doing the sorting task since it was not part of the experiment.

Virtually all the subjects agreed to help the experimenter with this sorting task for varying lengths of time. When a subject expressed that he had done enough either verbally or by walking to the door, the experimenter always agreed and thanked him for helping. If a subject spent thirty minutes on the task the experimenter stopped the subject and indicated to him that he had certainly done enough. A half-hour maximum limit was imposed on this task since all subjects had previously been told that they would participate in a one-hour experiment, and after the completion of all the experimental requirements including a maximum of half-an-hour of this sorting task, there was still approximately ten minutes left in the hour, so that if the subject had a class following the experiment, he had ample time to reach its location on the campus.

Just before the subject left the laboratory, the experimenter, verbally stating that he had forgotten to ask the subject earlier and apologizing for it, asked the subject to complete a short personal data sheet (shown on next page) on which the last question was: "What do you think the purpose of this experiment was?" On the basis of replies to this question or previous comments 0, 1, or 2 subjects at most were discarded per experiment since virtually none were suspicious of the real manipulations and purposes of the experiment. This personal data sheet was also the means by which information such as age of subject,

Personal data sheet-Confidential-

- (1) Name: _____
- (2) Age: _____
- (3) Age of Brothers (if any): _____
- (4) Age of Sisters (if any): _____
- (5) What is the occupation of your father? _____

- (6) What is your father's annual income (nearest \$1000.)? _____

- (7) What do you think was the purpose of this experiment?
(state briefly): _____

age of brother (s) and sister (s), birth order, father's annual income and so on was obtained.

After the completion of this sheet, which generally took two or three minutes, all subjects were reminded to complete the remaining questionnaire that night between ten and eleven o'clock and to return it in two days at most. Finally they were urged not to discuss any part of this experiment with anyone.

A word concerning the content and purpose of this last questionnaire may be appropriate at this point. The questionnaire was essentially a post-experimental check on the experimental manipulations. Its content varied somewhat depending upon whether or not the subject performed the motor task (appendix I, part e) or completed a third personality questionnaire (appendix I, part f). The most important question: "How well do you think you performed on the motor task?", was a check to determine if the subject perceived the manipulations (success, failure) as intended.

F) Helping Measures

Although other dependent measures were obtained from time to time, two general measures of helping behaviour were observed most often. These were first, volunteering for additional experiments and second, actually helping the experimenter with the sorting task.

Four indices of helping behaviour were derived from the volunteering sheet completed by the subject. These were

(1) the number of experiments volunteered for (from zero to eight), (2) the number of experimental hours volunteered (from zero to a maximum of 71.5 hours), (3) the total amount of money asked for participation (from zero to a possible maximum of \$144.00 and finally (4) the monetary rate asked per hour of participation.

At this point, it should be mentioned that these volunteering indices did not all turn out to be equally valid or "good" reflections of helping behaviour. For example, most people would agree that the "total amount of money asked" index is not a good indicator of helping behaviour per se since generally it would be expected (and found) that the amount of money would be related to the number of hours volunteered. Based on the review of popular and most frequently used definitions of altruism in the psychological literature as well as some pilot data, it appears that the "number of hours volunteered" and the "monetary rate per hour" indices are by far the best differential measures of helping behaviour among these four volunteering indices.

The second general measure of helping behaviour had to do with the subject helping the experimenter on the sorting task. The exact number of sheets sorted as well as the time spent on this task were recorded for each subject. These last two indices of helping behaviour are considered to be in better agreement with our definition of altruism than any of the "volunteering" indices since the subject

expected no monetary gain for this sorting task, as he did for additional experiments.

A speed index (number of sheets/time) was also computed for the sorting task but since significant speed differences rarely were obtained between the various experimental treatments it will not be reported here.

G) Methodological Note

In general, when reporting the experimental results, some of the indices of helping behaviour are not mentioned. This can be taken to mean that no significant ($P < .05$) differences were obtained between the experimental treatments using these indices.

The data analyses in the chapters that follow are, in keeping with the altruism field, based on non-parametric statistical tests. These tests, while often lacking the power of parametric tests, were felt to be generally more suitable since the data for most of the measures were not normally distributed. Furthermore, the fact that a maximum was externally imposed on most measures contributed to the skewness of the distributions. These tests require fewer assumptions and avoid transformations of the raw data which would have been necessary in some experiments but not in others.

In keeping with the tradition in psychological literature, the probability values corresponding to the various statistics have been reported. A P value of less

than .05 was chosen as an acceptable confidence level. The P values reported in the text have not been corrected for multiple comparisons. However, since in most cases, multiple contrasts are assessed after a significant overall analysis of variance and furthermore, since we are mainly interested in only three comparisons (success versus failure, success versus control, failure versus control), this does not change substantially the required value of P. Strictly speaking, nevertheless, a P value equal or less than .0166 is required for each of the three contrasts if an overall P value of .05 is to be the acceptable overall confidence level.

Except for the first two studies in which no directional hypotheses were made, most tests in subsequent experiments were directional and the tests are therefore one-tailed.

In this report, significance levels larger than the .05 customary level have sometimes been reported when it was felt that to neglect them would be to overlook interesting data trends. Comparisons significant at these levels must of course be treated as non-significant since the rejection level of .05 has been chosen.

We have reported such comparisons in terms of a "tendency" for one group to be different from another, with the view that such results can be treated as "hypothesis generating". This was done mainly in the initial studies

reported in the next chapter. The results of later studies support the proposition that this was a useful statistical strategy to follow.

Chapter V

Initial Studies

A) Introduction

When this research was begun in early 1971, experiments dealing with the effects of success and failure on helping behaviour were rather few. In his review of the literature on altruism in 1970, Krebs could find only three published articles which reported the effects of success and failure, or competence on helping behaviour (Berkowitz and Connor, 1966; Staub, 1968; Midlarsky, 1968a;) and the evidence from these studies was rather contradictory. Berkowitz and Connor (1966) found that success on a simple task resulted in greater effort on behalf of a highly dependent peer than did failure or no experience at all; however, success did not result in more helping on behalf of others of low dependency. In addition, as pointed out earlier, an examination of their data indicates equivocal support for their hypotheses. For example, failure on prior task did not reduce the person's efforts on behalf of a dependent supervisor in comparison to the effort expended by the control group (Berkowitz and Connor, 1966, Table 2, p.667). In their experimental setting, where the subject had some kind of contractual relationship with a peer for whom he was working, success appeared to enhance productivity. This experiment leaves unanswered the

question of whether success or failure affects behaviour in noncontractual setting, one where the person being helped is either not under such an explicit contract or is outside the situation, and it says nothing about reactions toward a non-peer. Furthermore, given the overall setting of this experiment, it can be argued that productivity rather than helping behaviour was the dependent measure.

Staub's (1968) findings are equally questionable although in his study there was no explicit contractual relationship between subjects. The dependent measure was candy sharing, a better helping measure than that Berkowitz and Connor (1966) since by sharing, the subjects deprived themselves of something valuable, a requirement not met by the productivity measure of Berkowitz and Connor (1966). However, Staub (1968) found that fifth-grade children tended to leave more candy for a hypothetical other after they had succeeded rather than after they had failed or were average in a bowling game task. In contrast, fourth-grade children were found to leave more after they had failed! Staub suggested that a "norm of deserving" motivated the fourth-graders, but that the fifth-graders were motivated by "norms or standards or values directly related to sharing". As Krebs (1970) later pointed out, Staub gave no reason as to why the two norms should differentially affect the two particular age groups in question. Thus, on the basis of this study it seems that, depending on the condition, either

prior success and failure may increase subsequent helping behaviour.

Finally, Midlarsky's (1968a) findings do not help clarify the conflicting evidence, since she studied perceived competence to adapt to electric shocks and her dependent helping measure was the number of shocks the subject was willing to take for another person. Furthermore, shocks were not of equal intensity across conditions, a possible source of bias.

This was the state of knowledge when the research reported here began. The obvious general paucity of the literature, the conflicting results discussed above, as well as the importance of the topic adequately justify the need for further research on this topic.

Experiment I

This was a study designed to explore potential effects of success and failure on helping behaviour.

Subjects and Procedure

The subjects were forty first year male university students randomly selected from the university directory. They were not paid to participate in the experiment. The subjects were randomly divided into four groups of equal size ($N = 10$); two of these groups served as experimental groups (success and failure) and two groups as controls.

The procedure of this experiment was generally as described in chapter IV except that the post-experimental questionnaire was not a manipulation check but rather an additional personality questionnaire to be filled out at home between ten and eleven o'clock at night.

Experimental Groups

All subjects in these two groups performed the motor task and were made to fail on the two practice trials; half of them ($N=10$) subsequently were allowed to succeed, that is they achieved eight perfect trials out of the ten trials. The remainder of these subjects failed, that is, they achieved four perfect trials out of ten. It should be pointed out that these performance levels are two perfect trials above or below the high-school student's norm mentioned in the instructions.

Before discussing the purpose of the control groups, it also should be noted that in addition to the indices of helping behaviour described in chapter IV, an attempt was made in this instance to measure another potentially interesting dependent variable, blood donation. Between ten and eleven o'clock of the same day the subject took part in the experiment, a male or a female called each subject and asked him to give blood. Half of the subjects in each group, selected randomly, were called by the female and the other half by the male. The instructions, learned verbatim by both callers, can be found in appendix I (see G). If a subject

was not at home he was called back the next night by the same person. This continued until he was reached. One week after the completion of the experiment, the list of all subjects was sent to the Hamilton Blood Clinic in order to find out if any actually showed up at the clinic¹.

Control Groups

Subjects in the first control group did exactly the same thing as subjects in the experimental groups except that the motor task was replaced by a third questionnaire which took about the same length of time to complete as the motor task. This control group was included in order to assess how subjects who participated in a similar experiment but who had no experience of success or failure would behave in regard to the same altruistic dependent measures. This control was necessary to determine if the success or failure experience increased, decreased or did not affect subsequent helping behaviours.

Subjects in the second control group were also randomly selected from the same population but these subjects never came to the laboratory. They were only phoned by one of the callers and requested to give blood in the standard manner.

This second control group was included in order to get baseline rates concerning first, willingness to volunteer

1... We wish to thank the Hamilton Red Cross Blood Clinic staff for their cooperation in this study.

to give blood, and secondly, the number who would actually give blood when simply requested by phone without having taken part in an experiment. The establishment of these baseline rates was essential if the relative effectiveness of the manipulations on this dependent variable was to be assessed.

To summarize, subjects in this experiment either failed ($N=10$) or succeeded ($N=10$), on the motor task, or filled out a third questionnaire instead (control 1, $N=10$). Subsequently all these subjects were asked to volunteer for additional experiments and were finally requested by the experimenter to help him with the paper sorting task. That night, all subjects were called by a different experimenter and asked to give blood.

A fourth group of subjects who never came to the laboratory was also called and asked to give blood (control 2, $N=10$). From this latter group, baseline rates concerning blood donation were obtained.

Results and Discussion

None of the comparisons between groups on the dependent measures of helping behaviours, including the volunteering indices, the sorting task indices and the blood donation measures, were significant at the .05 level of confidence and therefore they are not reported here. However, an interesting data trend was observed on most dependent measures of helping behaviour which is illustrated in figure 2.

Insert figure 2 about here

This figure presents the mean helping time in seconds on the sorting task for each of the three groups that came to the laboratory. Since this was the first experiment and the prior evidence was rather confusing, no directional hypotheses had been made. A non-parametric Kruskal-Wallis Analysis of Variance ($H = 2.66$, $df = 2$, $N.S.$ ¹, two-tailed) revealed that there were no overall significant differences between groups on this helping index. Similar analyses on other dependent measures of helping behaviour produced similar results. Although not statistically appropriate, we nevertheless computed a Mann-Whitney U Test between the success and failure groups on the time sorting sheets index. The results of this test ($U = 33$, $P = .15$) showed that the failure group ($\bar{X} = 1454.5$, $S.D. = 201.1$) tended to help for a longer period of time than the success group ($\bar{X} = 1240.7$, $S.D. = 209.5$). This trend is opposite to that reported by Berkowitz and Connor (1966) and Midlarsky (1968a).

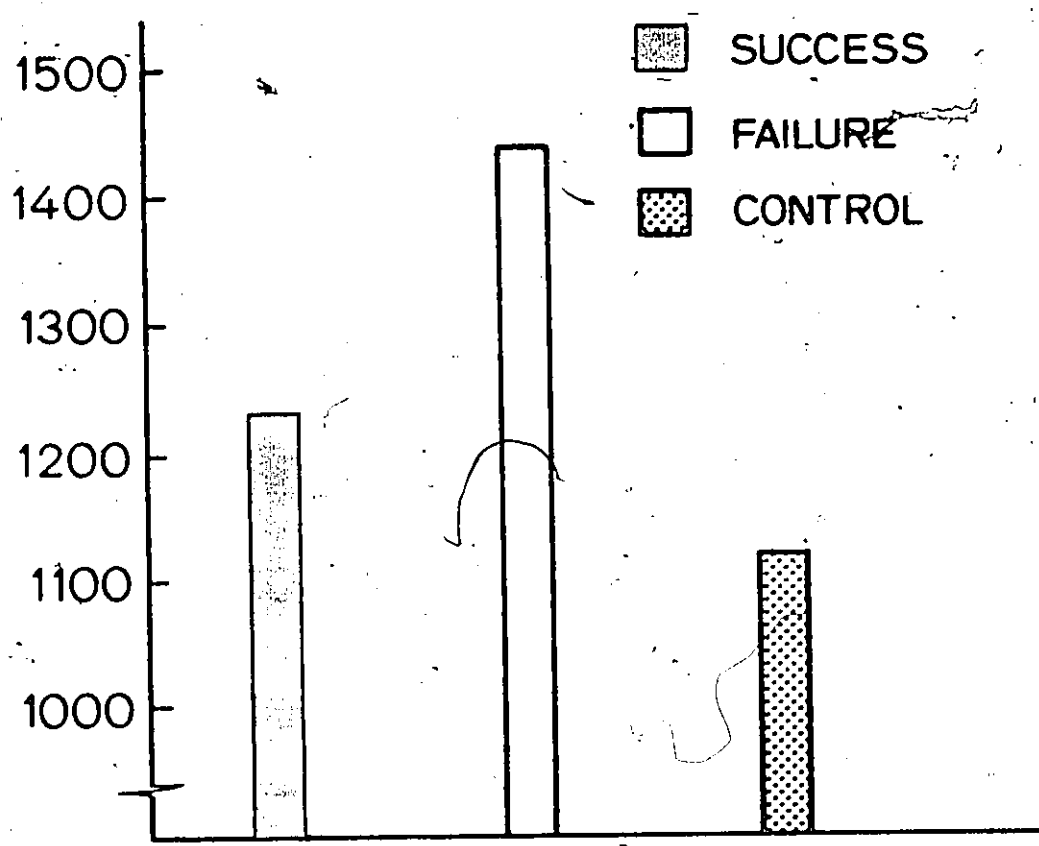
It may be worthwhile mentioning that of the forty subjects asked to give blood, twenty accepted verbally (almost evenly distributed across the four groups), but only four subjects actually gave blood (two from the failure group; one from the success group; one from the baseline control group and none from the other control group).

¹...N.S. means non-significant.

FIGURE 2

EXPERIMENT I

MEAN HELPING TIME IN SECONDS



Results from this experiment, eventhough non-significant statistically, were encouraging at this stage of the research especially since the manipulations were brief and rather weak. It was felt that with more powerful manipulations of success and failure, better results could be expected. This is essentially what was done in the second study.

Blood giving measures were abandoned after this initial study but the instructions were kept identical for comparison purposes.

Experiment II

Subjects and Procedural Changes

This study is similar to the first except for the following modifications. First the sample of subjects was selected randomly from a slightly different population, second year male university students attending summer school, most of whom were high-school teachers. These subjects were paid one dollar for their participation but were not paid for the time they spent helping the experimenter on the sorting task. This was clearly specified before they started to work on the sorting task.

In order to increase the power of the experimental manipulations, two other procedural changes were implemented. These changes were suggested either from observation of

subjects' reactions in the first experiment or from their verbal comments during or after the experiment. The first modification consisted of changing the definition of success and failure on the motor task. It seemed in the first experiment that what was important to most subjects was not the achievement of a high score on the motor task, but rather the attainment of their predicted performance score or higher. When, for example, a subject predicted he would achieve four perfect trials out of ten trials, he seemed to experience satisfaction if he achieved this level of performance. Thus what appeared to be important to most subjects was not necessarily a high score per se, but rather fulfillment of their prediction. This is quite reasonable in light of the finding that people generally have different levels of aspiration and that level of aspiration varies depending on the nature of the task (Siegel, 1957).

Success was therefore redefined as the subject's performance prediction on the motor task as established after the practice trials plus (+) two perfect trials, and failure was the subject's performance prediction similarly established minus (-) two perfect trials. Furthermore, all experimental subjects in this experiment were given five (5) practice trials instead of two, and performed twenty (20) subsequent trials rather than ten. All experimental subjects were made to achieve three successful trials out of the five practice trials. These changes were implemented because

it was felt that a longer performance task would have more impact on the subject and would likely produce stronger subsequent effects on the dependent measures.

An example of these new manipulations may help clarify the procedure of this experiment. Assume that a subject, after having succeeded on three of the five practice trials (as all experimental subjects did), predicted that he would get twelve (12) perfect trials out of the twenty trials. If this subject had been randomly assigned previously to the success treatment, the experimenter would then have made him achieve fourteen ($12 + 2 = 14$) perfect trials out of the twenty, and if he had been randomly assigned to the failure treatment, he would have received ten ($12 - 2 = 10$) perfect trials out of the twenty trials. Thus a subject succeeded or failed by achieving either two perfect trials more than he predicted, or two less than he predicted. It should be noted that with this new definition of success and failure, it is possible for two subjects to have the same performance level on the motor task, and one of them classified as a failure subject, and the other as a success subject.

Subjects in the only control group in this experiment were treated in exactly the same manner as the experimental groups except that the motor task was again replaced by a third questionnaire.

The dependent helping measures were once again the volunteering and the sorting task indices. In this, as well

as in all subsequent experiments, blood donation measures were omitted.

Results and Discussion

All comparisons between groups on the volunteering and the sorting task helping measures yielded non-significant results. However, the data trend which appeared in experiment I was again apparent and can be seen in figure 3.

 Insert figure 3 about here

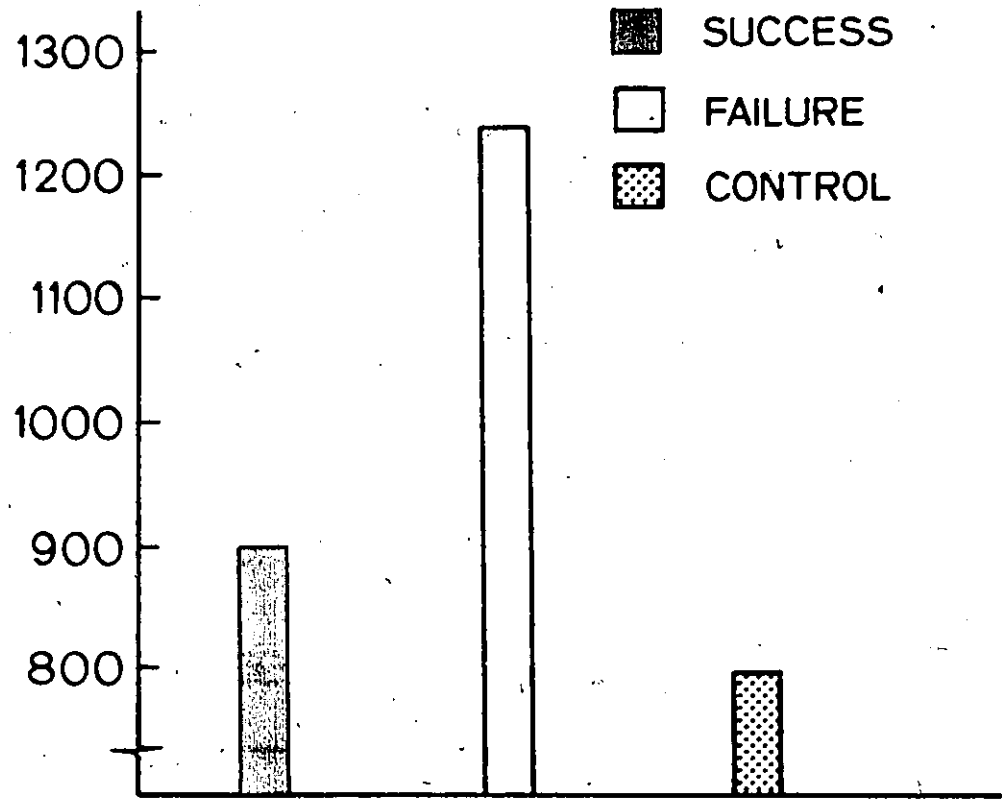
This figure presents the mean helping time in seconds spent on the sorting task by each of the three groups. A non-parametric Kruskal-Wallis analysis of variance ($H_c^1 = 4.025$, $df = 2$, $P < .15$, two-tailed) revealed that there were differences between groups on this helping index at beyond the .15 level of confidence. Identical analyses on the other dependent measures produced similar results but generally not as significant statistically. Again Mann-Whitney U tests were computed between treatments in order to determine which group differences approached significance. These tests revealed that the failure group ($\bar{X} = 1245.7$, $S.D. = 235.0$) tended to help for a longer period of time than the success group ($\bar{X} = 904.4$, $S.D. = 217.6$) ($U = 30$, $P = .07$), and that the failure group also helped for a longer period of time than the control group ($\bar{X} = 792.0$, $S.D. = 300.0$) ($U = 26$, $P < .05$).

1... H_c means H test corrected for ties.

FIGURE 3

EXPERIMENT II

MEAN HELPING TIME IN SECONDS.



[Handwritten signature]

No significant difference was found between the success and control treatments.

These results replicate the findings obtained in the initial study and generally the levels of significance have improved although they are still unacceptable statistically. However, it should be pointed out in this regard that there were only ten subjects in each condition and that strong statistically significant results are rarely obtained in social psychology with such a small number of subjects per treatment. The logical next step would have been to increase the sample size but unfortunately summer school had concluded and consequently it was impossible to obtain subjects from the same population.

Summary

The results of these two initial studies were encouraging, especially in view of the fact that similar trends were found in both experiments despite changes in the general procedure, the sample and the length of the task. Generally, it was found that failure subjects tended to help more than success subjects particularly on the time they spent helping the experimenter with the sorting task. The direction of these results is opposite to that reported by Berkowitz and Connor (1966) and Midlarsky (1968a), but is in agreement with one of Staub's (1968) findings:

Although comparisons between groups by means of Mann-Whitney U tests were inappropriate statistically given

the non-significant overall analyses of variance, there is some justification in doing them since these experiments were essentially explorative studies. However, at this stage of the research, a replication of the foregoing findings with a larger and more homogeneous sample appeared necessary prior to pursuing the research any further. This would also be necessary before attempting to explain the data theoretically or before experimentally manipulating potential explanatory variables.

Finally, these findings are, it will be recalled, limited to male subjects interacting with a male experimenter. Thus it would also be appropriate to conduct the same experiment using both male and female subjects interacting with both male and female experimenters. This would allow an assessment of the generality of the findings as well as potential interaction effects. Experiments fulfilling these propositions are presented in chapter VI.

Chapter VI

The effects of sex of subjects and sex of experimenters (replication studies).

The experiments reported in this chapter had several objectives; the first was to determine if the trend obtained in the initial studies was reliable. If it was then it would be worthwhile to determine if female subjects behaved in manner similar to males. Finally the sex of the experimenter was varied systematically since there is evidence that this factor may interact with the sex of the subjects, especially when studying altruism.

Subjects

In the experiment to be reported in this chapter, male or female first year undergraduates, selected randomly from the university student directory were phoned and asked to participate in an experiment in psychology. Subjects were told they would be paid at the rate of \$2.00 an hour for their participation.

Experiment III

This study had two purposes; first to try to reproduce the findings reported in the first studies, and second, to determine if first year undergraduate female students would react in a manner similar to males.

Forty five male and forty five female subjects participated in this experiment. All subjects within a sex category were randomly divided into three groups of equal size ($N=15$): a success, a failure and a control group. The experimenter was male as was the case in the initial studies.

Procedure

The procedure of this experiment was identical to that used in the previous experiment. In brief, after the completion of two personality questionnaires, some subjects performed the motor task (success and failure subjects) and some completed a third personality questionnaire (control subjects). Subjects who performed the motor task were made to succeed on three of the five practice trials after which they predicted their subsequent performance level on the motor task. Half of these subjects were then made to achieve two perfect trials more (success) or less (failure) than they had predicted. After the completion of the twenty trials on the motor task or the completion of the third questionnaire, all subjects were requested to volunteer for additional experiments and then they were asked by the experimenter to help him with the sorting task.

In this study the only change from the procedure of experiment II concerns the questionnaire filled out at home. For the first time this questionnaire was a manipulation check as described in the general methodology chapter. This questionnaire can be found in appendix I (section E and F).

Manipulation Check

One of the questions included in the take-home questionnaire completed by the experimental subjects, was "How well do you think you performed on the motor task". Subjects answered this question by circling a numeral ranging from one (1) (very bad) to seven (7) (very well). From the data obtained on this question, it could be determined how well the subjects thought they had performed on the motor task. Table I presents the data obtained from the responses to this question.

 Insert Table I about here

This table clearly shows that the experimental subjects perceived the manipulations as intended, that is, success subjects thought they did very well (5.125 for males and 5.23 for females) and failure subjects indicated that they did less well (4.18 for males and 3.61 for females). One-tailed t tests revealed that the mean of the success subjects was significantly different from the mean of the failure subjects, for both males ($t_{24} = 2.09$, $P < .025$) and females ($t_{24} = 3.75$, $P < .001$). There were no sex differences. Thus, it can be concluded that the experimental manipulations were successful.

Results

A non-parametric one-way analysis of variance was selected rather than the equivalent parametric test in

TABLE I

Summary data on manipulations check

MALES		FEMALES	
Success	Failure	Success	Failure
$\bar{X} = 5.125$	4.18	5.23	3.61
S.D. = 0.834	1.401	.83	1.32
$N^1 = 13$	13	13	13
$t_{24} = 2.09$		$t_{24} = 3.75$	
$P < 0.025$		$P < 0.01$	
one-tailed		one-tailed	

1. Some subjects did not returned the questionnaire.

order to avoid meeting the assumptions of normality of the distribution and homogeneity of variance. Individual comparisons between two treatments following an overall H test were made by mean of the Mann-Whitney U statistic as recommended by Winer (1962, p.623).

A Kruskal-Wallis one-way analysis of variance was computed on each index of helping behaviour and these overall results are presented in table II.

Insert table II about here

As this table shows, three indices of helping behaviour reached significance beyond the .07 level. These are the number of hours volunteered ($H = 13.09$, $df = 5$, $P < .03$), the total amount of money requested for additional participation in experiments ($H = 10.4$, $df = 5$, $P < .07$) and the time spent sorting sheets for the experimenter ($H = 32.71$, $df = 5$, $P < .001$).

The results obtained on the number of hours volunteered index are presented in figure 4 for sex and condition.

Insert figure 4 about here

As can be seen from this figure and as is revealed by Mann-Whitney U tests, no comparisons between treatments in the female sample reached significance. However, in the male sample two contrasts reached the .05 level of

TABLE II

Kruskal-Wallis one-way Anova for all indices of helping behaviour.

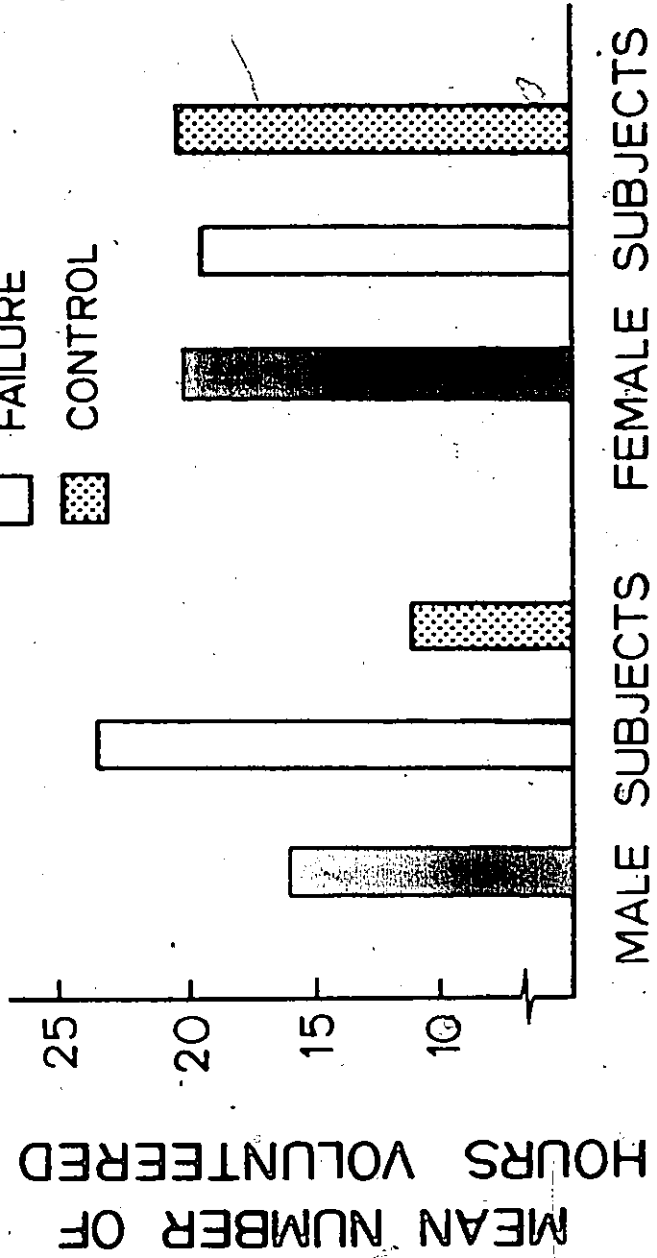
indices of helping	VOLUNTEERING				SORTING TASK	
	number of experiments	number of hours	total amount money re-quested	ratio \$/hours	number of sheets sorted	time spent sorting sheets
overall H test 6 groups df = 5	4.74	13.09	10.4	7.81	3.87	32.71
level of significance	N.S.	<.03	<.07	N.S.	N.S.	<.001

1. All H tests are corrected for tied ranks

FIGURE 4

EXPERIMENT III

- SUCCESS
- FAILURE
- CONTROL



significance. Failure subjects ($\bar{X} = 24.1$, S.D. = 22.9) volunteered for significantly more hours than the success subjects ($\bar{X} = 16.4$, S.D. = 24.3) ($U = 71.5$, $P < .05$) or the control subjects ($\bar{X} = 11.7$, S.D. = 16.6) ($U = 69$, $P < .05$). No significant differences were found between the success and control treatments.

The results obtained on the time spent sorting sheets for the experimenter are presented in figure 5.

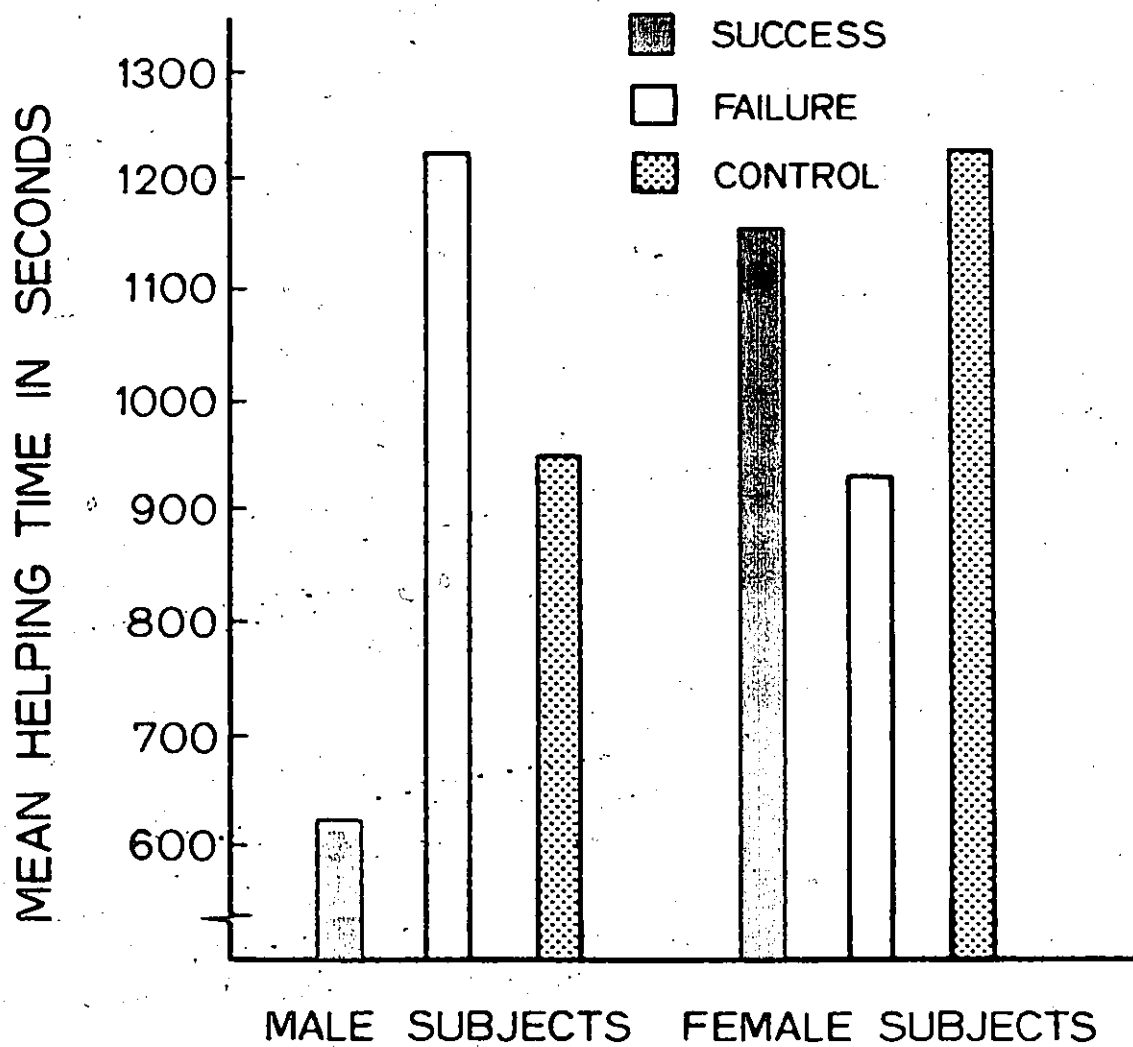
 Insert figure 5 about here

As seen in this figure, none of the female contrasts reached significance. However, all comparisons reached acceptable levels of confidence in the male sample. Failure subjects ($\bar{X} = 1239.8$, S.D. = 511.8) were found to help the experimenter on the sorting task for significantly longer periods of time than both the success subjects ($\bar{X} = 634.7$, S.D. = 388.9) ($U = 40$, $P = .001$) and the control subjects ($\bar{X} = 961.5$, S.D. = 496.7) ($U = 73.5$, $P \approx .06$) and on this index, for the first time in this research, the controls helped significantly longer than the success subjects ($U = 66$, $P < .05$).

It should be noted that in general the female subjects helped more than the male subjects under both the control and the success treatments on both indices of helping behaviour (see figures 4 and 5) but that male subjects helped more than female subjects under the failure treatment

FIGURE 5

EXPERIMENT III



5

on these two indices. Furthermore, when contrasted with the control treatment, none of the experimental treatments in the female sample produced a significant effect on these two dependent measures. For male subjects, however, the failure treatment increased helping behaviour on both indices. The success treatment had no effect on the number of hours volunteered index, but decreased helping behaviour on the time spent sorting sheets for the experimenter.

As argued earlier, the time spent sorting sheets index is the most reliable indicator of helping behaviour. Therefore it is this index that should be examined more closely in order to theoretically explain the finding.

Finally, given the results of this experiment, the trend found in the initial studies with male subjects has now been replicated at significant levels. Thus, generally, it can be concluded that, under these experimental conditions, male failure subjects helped more than both the success and the control subjects, but no consistent significant differences were observed for female subjects. This last finding concerning female subjects may be due to the fact that the experimenter was always a male. If a female was the experimenter, the results might be different. This is what was investigated in experiment IV.

Experiment IV

In this experiment a new group of subjects was run by two female experimenters¹ under the same procedure as in experiment III. Each female experimenter was randomly assigned to thirty of the new subjects (15 males and 15 females) randomly selected from the same population as in experiment III, that is, first year university students. Since the data collected by the two female experimenters were not significantly different, they were combined in all analyses.

The general procedure of this experiment was identical in all cases and has been described in detail under experiment III.

Results

A kruskal-Wallis one-way analysis of variance was computed on each index of helping behaviour and these overall results are presented in table III.

Insert Table III about here

As can be seen from this table, all comparisons between groups on the volunteering and sorting task helping measures yielded non significant results. However, the trend which appeared in the three previous experiments was

¹... I wish to express my thanks to Barbara Gushurst and Elizabeth Inman for their help as experimenters in this experiment.

Table III

Kruskal-Wallis one way Anova all
indices of helping behaviour.

Indices of Helping	VOLUNTEERING				SORTING TASK	
	number of experi- ments	number of hours	total amount of money requested	ratio \$/ hour	number of sheets sorted	time spent sorting sheets
Overall H test ¹ 6 groups df = 5	9.91	7.94	7.09	0.52	5.85	6.47
Level of confi- dence	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.

1... All H tests are corrected for tied ranks.

also apparent here and is illustrated in figure 6.

Insert figure 6 about here

From this figure, it can be seen that failure female subjects tended to sort more sheets for the female experimenter ($U = 34$, $P < .12$, one-tailed) and for a longer periods of time ($U = 37.5$, $P < .18$, one-tailed) than the success female subjects. It will be recalled that the same sex trend was significant in experiment III but forty five rather than thirty subjects had been run by the male experimenter.

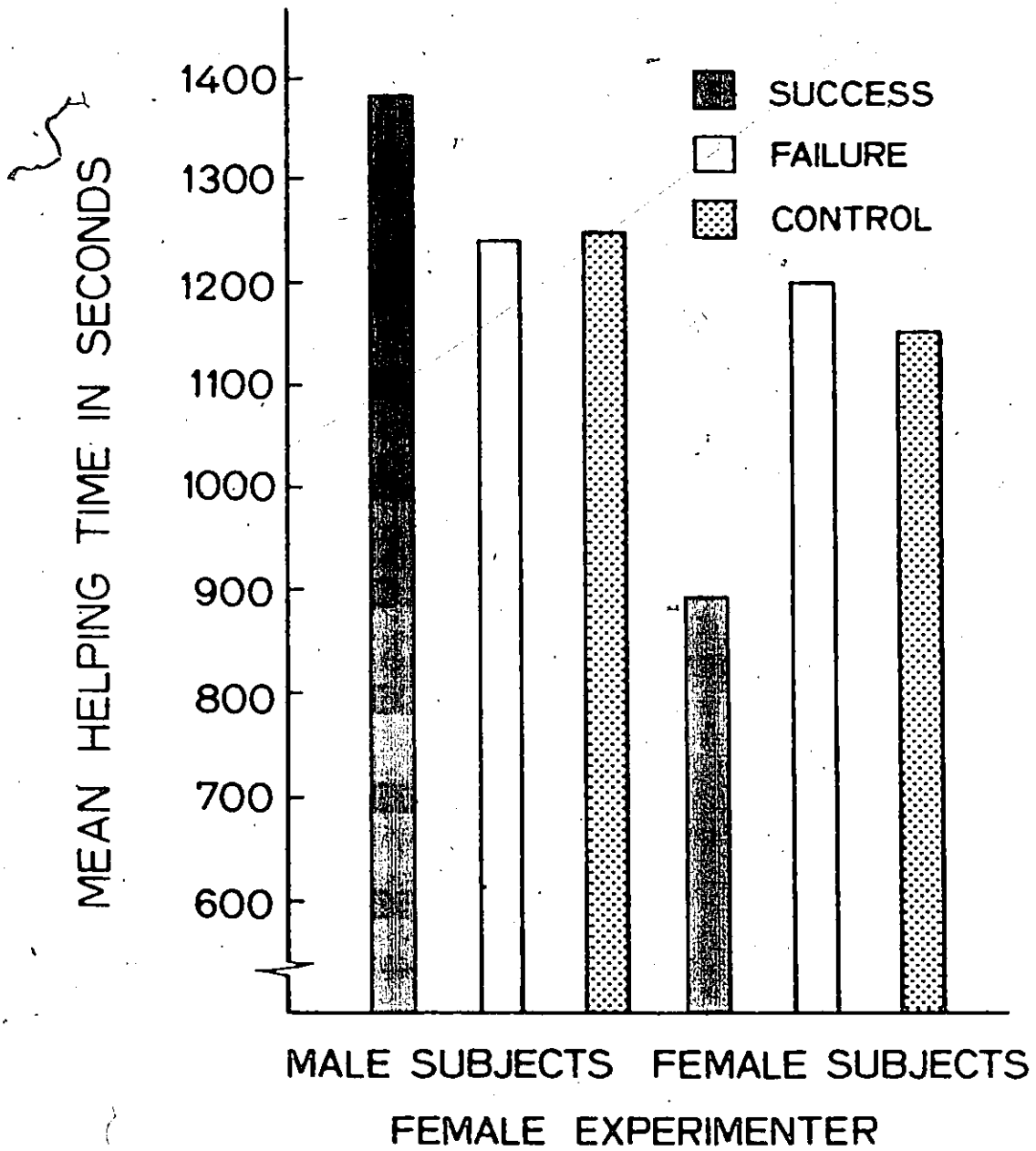
Further Analysis

It may be worthwhile in order to determine if there are any interaction effects to combine the data obtained from the first sixty subjects included in experiment III which was run by the male experimenter with the data obtained from the sixty subjects included in experiment IV which was run by the female experimenters. However, it should be recalled that these two experiments were conducted one after the other. Thus, time was not held constant across the conditions. This limits the conclusions that can be reached in this manner.

This grouping of the data resulted in a 2 (sex of subjects) x 3 (success, failure and control treatments) x 2 (sex of experimenters) factorial design.

FIGURE 6

EXPERIMENT IV



Results

Non-parametric Kruskal-Wallis tests were computed on the time spent sorting sheets for the experimenter in order to test for main effects as well as two-way interactions. The results of these tests are presented in table IV.

Insert Table IV about here

As this table reveals, none of the main effects is significant; however, a two-way interaction is significant. The AC (sex of the subjects x sex of the experimenters) interaction is significant at less than the .05 level of confidence. The meaning of this interaction can best be seen in figure 7 which summarizes the data for each experimental treatment under all conditions.

Insert figure 7 about here

From this figure, it can be seen that, under all treatments except one, female subjects helped a male experimenter more than male subjects, and male subjects helped a female experimenter more than female subjects. This is reflected by the significant AC interaction. The only exception to this general trend is the male failure subjects who helped the male experimenter more than the female failure subjects.

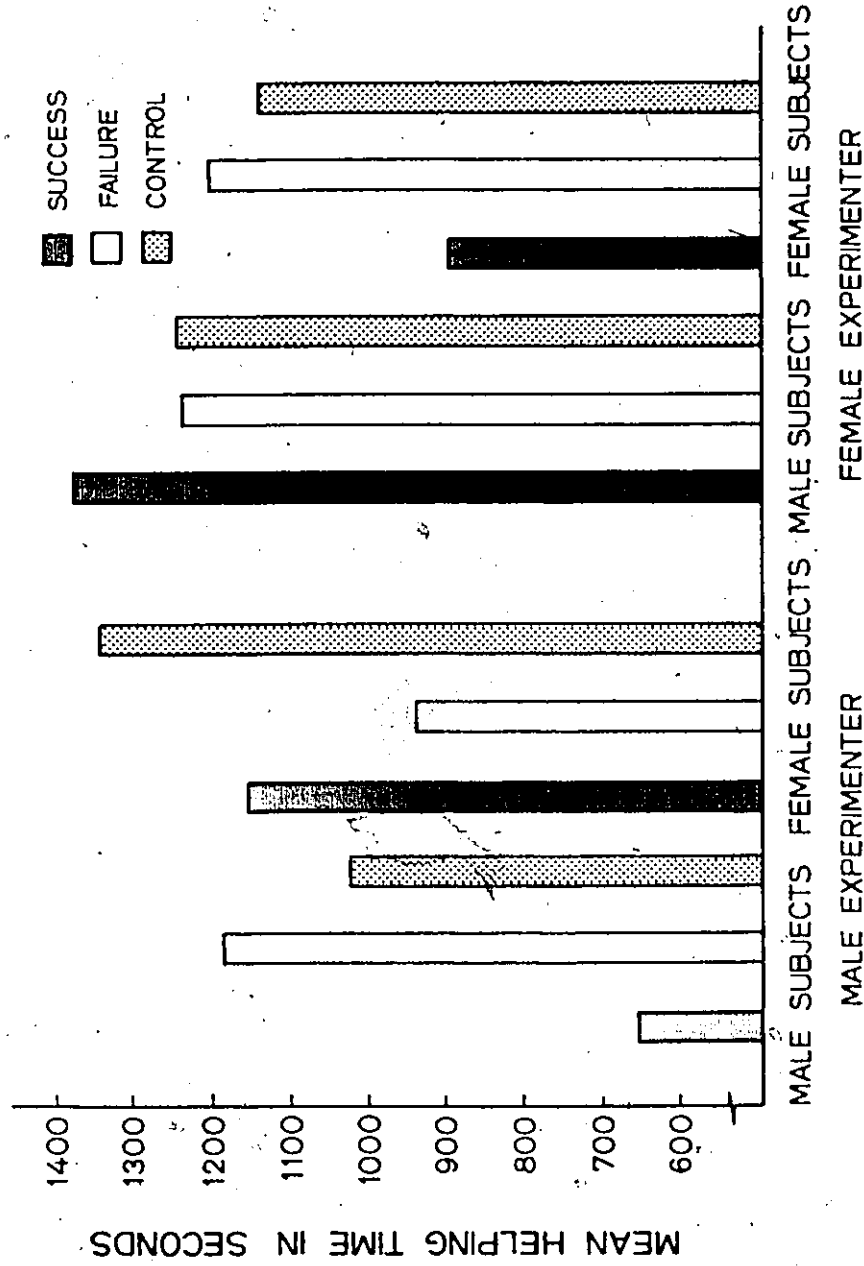
Since non-parametric tests have not yet been designed

Table IV

Kruskal-Wallis analysis of variance
computed on the time spent sorting
sheets for the experimenter (UNIT:
seconds), $N = 120$.

Source	df	H	P
A (sex of subjects)	1	.006	N.S.
B (treatments)	2	2.72	N.S.
C (sex of experimenters)	1	2.14	N.S.
AB	2	.033	N.S.
AC	1	4.69	$P < .05$
BC	2	.885	N.S.

FIGURE 7
EXPERIMENTS III AND IV
SEX OF SUBJECTS x SEX OF EXPERIMENTERS



SAMPLE: STUDENT
MANIPULATIONS: P.P.+2, -2, QUESTIONNAIRE.
EXPERIMENTER: SAME

to test three-way interactions and since in addition a Cochran test of homogeneity of variance ($C^{12,9}_{.99} = .11$) indicated that the data were homogeneous, a $2 \times 3 \times 2$ parametric analysis of variance was computed on the time spent sorting sheets for the experimenter. These results are presented in table V.

 Insert Table V about here

As this table reveals, none of the main effects is significant; however, two interactions approach significance. The AC (sex of subjects x sex of experimenters) interaction is significant at less than the .06 level of confidence, and the ABC interaction is significant at less than the .07 level. The ABC interaction is more complex and more difficult to describe from figure 7. Briefly stated, the meaning of this three-way interaction is as follows: with a male experimenter, male subjects who had failed helped more than those who had succeeded or were controls, but in the case of female subjects, those in the control group helped more than those who had failed. In addition, female subjects helped more than their male counterparts in both the success and the control groups but males helped more than females in the failure condition.

On the other hand, with a female experimenter, there are no differences between any treatments for the male subjects, but for females, those who had failed or were controls helped more than those who had succeeded.

Table V

A 2 (sex of subjects) x 3 (treatments)
 x 2 (sex of experimenters) analysis of variance
 (time helping in seconds).

SOURCE	Ss	df	ms	F	P
A (sex of subjects)	1952.1	1	1952.1	0.006	N.S.
B (treatments)	590563.5	2	295281.75	0.923	N.S.
C (sex of experimenter)	546480.	1	546480.	1.70	N.S.
AB	323699.7	2	161849.8	0.506	N.S.
AC	1158317.8	1	1158317.8	3.624	<.06
BC	26046.3	2	13023.15	0.040	N.S.
ABC	1773863.6	2	886931.8	2.774	<.07
Within cells	34519963.	108	319629.28		
Total	39219384.	119	329574.65		

Furthermore, there are no sex differences in both the control and the failure treatments, but males helped a female experimenter more than female subjects under the success condition.

Thus, within same sex dyads (male subjects with a male experimenter or female subjects with a female experimenter) the same trend occurs: failure subjects helped more than success subjects, and the control subjects were intermediate between these two groups. However, given different sex dyads (female subjects with a male experimenter or male subjects with a female experimenter), a partial reversal of the foregoing trend is found, that is, success subjects helped more than failure subjects.

In view of the marginal levels of significance reached on this index of helping behaviour which so far has been the most reliable, no further analyses were made.

One possible reason why the main treatment effect (B) was not significant in these analyses may be the weakness of the experimental manipulations. It will be recalled that on the motor task the experimental subjects were made to achieve only two perfect trials more or less than they predicted. Thus by increasing the impact of these manipulations, more clear cut results might be obtained. This possibility will be investigated in subsequent experiments.

Summary of studies III and IV

Study III (N=90) used both males and females as subjects but the experimenter was a male. With male subjects, it was generally found that failure subjects helped more than both success and control subjects on the two significant indices of helping behaviour. However, only on the time spent sorting sheets for the experimenter did the controls help more than the success subjects.

With female subjects, none of the comparisons between groups on all dependent measures of helping behaviour approached significance.

In general, it also has been found in experiment III that, under both success and control treatments, females helped the male experimenter more than the male subjects; however, under the failure treatment, males were found to help the male experimenter more than females.

Because of the contrasting findings obtained with males and females, it was felt necessary to run the same experiment but to use a female experimenter instead. None of the comparisons between groups on all dependent measures of helping behaviour reached significant levels of confidence. However, the same trend which appeared in the previous studies was also apparent here: failure female subjects tended to sort more sheets and they did so for longer periods of time than success female subjects.

Finally, male subjects were found, under all conditions, to help the female experimenter more than female subjects. Additional analyses of some of the data obtained in experiment III combined with those obtained in experiment IV revealed that two interactions approached significance. The AC (sex of subjects x sex of experimenters) interaction indicated that generally female subjects helped a male experimenter more than male subjects, and male subjects, on the other hand, helped a female experimenter more than female subjects. The three-way interaction indicated that, within same sex dyads, the failure subjects helped more than success subjects, and the controls were intermediate between these two groups. However, given different sex dyads, a partial reversal of the foregoing trend was found, that is, success subjects helped more than failure subjects.

Thus it seems reasonable to conclude that these findings, in addition to those of the initial studies, convincingly show that, within same sex dyads, the failure subjects help more than both the control and the success subjects. This result has been replicated three times in our programme of research and it will be recalled that it is the opposite of what Berkowitz and Connor (1966) and Midlarsky (1968a) have reported. In the next chapter, the findings of experiments using more powerful manipulations will be reported and an attempt at explaining the conflict of these findings with those of previous studies will be presented.

Chapter VII

Manipulations of explanatory variables and further replications.

Introduction

In this chapter, four new experiments will be presented. The main purposes of these studies were first, to investigate the variables that might have been instrumental in producing the particular effects obtained in previous studies and, second, to determine if a more powerful manipulation of success and failure would have a greater effect. Although in the previous studies some very significant results had been obtained (eg. $P < .001$ on the time spent sorting sheets in experiment III) it seemed nevertheless, necessary to replicate these experiments using fewer subjects per treatment and a more powerful independent manipulation of success and failure.

Before explaining the theoretical rationale underlying these experiments, it should be noted that at this point in the research programme it was decided to utilize only male subjects. The reason that prompted this decision were first, that somewhat similar data trends had been demonstrated using both males and females as subjects, that is, failure subjects helped an experimenter of the same sex more than success subjects and second, it was felt to be

theoretically more important to investigate potential variables producing this effect with only one sex of subject rather than continuing with the costly and time-consuming task of running subjects of both sexes in interaction with both male and female experimenters. Information on the potential cause (s) of this effect could be obtained more quickly in this manner.

Rationale Underlying the Subsequent Experiments

In this section, the experiments which were designed to clarify some of our previous findings on helping will be reviewed. An attempt is also made to render explicit the psychological reasoning and evidence underlying the hypotheses of these studies.

Given the conditions of our laboratory experiments, one result is clear: with a male experimenter, student male subjects help more (number of hours volunteer; time spent sorting sheets for the experimenter;) if they have failed on an antecedent task than if they have succeeded or were control subjects; similarly with a female experimenter, student female subjects tend to help more (time index) if they have failed or were control subjects than if they have succeeded on the antecedent task.

These results will be reviewed in the light of the few experiments in the literature dealing with the effects of antecedent success and failure on altruism.

In addition to the Berkowitz and Connor (1966), Midlarsky (1968a) and Staub (1968) findings reported earlier, another study (Isen, 1970) is relevant here. Isen predicted that subjects who succeeded would experience a "warm glow of success" which would subsequently lead them to be helpful, generous and friendly to others. She did find that success subjects donated significantly more money to a "Junior High Airconditioning Fund" introduced by a female confederate than failure subjects. It was also found that subjects who succeeded were more helpful (picking up a book that a female confederate dropped as she passed by the subject on her way out of the door) than those who failed. In a final experiment, Isen (1970) replicated these findings with a mixed student sample but for the first time she included a control group that did not perform the tasks, but instead were asked to estimate the difficulty of the tasks. Her results indicated that the success group had the highest mean helping score, and that the failure group was lowest, with the control group intermediate. The success group differed significantly from both the failure and the control groups, but these two were not significantly different from each other. Finally, only in the success group of the final experiment was there a tendency for males to be more helpful than females ($P = .066$; two-tailed).

On the whole, these results as well as those of

Berkowitz and Connor (1966) and Midlarsky (1968a) seem quite contrary to our own but the situations are different and this might possibly account for the conflicting results. In Isen's experiments for instance, the confederate who needed help was always a female and furthermore she was from outside the situation, that is she did not know whether the subject had succeeded or failed previously. In our experiment, the person in need of help is the experimenter, who knows whether the subject had succeeded or failed. Further, the experimenter is of the same sex as the subject (remember we are exclusively discussing the results mentioned at the beginning of this section). It clearly is possible that both of these two apparently contradictory sets of results are genuine. That is, success subjects helped an "outsider" more than failure subjects in Isen's experiment possibly because of the "warm glow of success" but that failure subjects helped an "insider" (a person in the situation who knows about the subject's prior experience) more than success subjects for another reason, having to do with the fact that the subjects were aware that the person in need knew of his prior experience. That is subjects who have failed may be trying to gain social approval.

For instance, a study concerned with the relationship between success or failure and self-presentation (Schneider, 1969) found that when the opportunity to gain approval from

another person was present, failure subjects were more positive in describing themselves than were success subjects. These data were interpreted as reflecting a difference between success and failure groups in either salience of potential approval, or in strategies of getting approval. On the basis of these findings, it might be reasonable to predict that subjects who failed would subsequently be more helpful toward the person who is aware of their failure, in an attempt to gain approval.

A study by Mischel, Coates and Raskoff (1968) also is relevant here. They studied how success and failure experiences in an achievement activity (bowling) affected subsequent self-gratification in a new non-achievement boring situation.

After the subjects (elementary school students) had experienced success and failure, the experimenter, referring to the designs as "mazes" explained that:

"There are a lot of mazes here, but you only have to do as many as you want. There are also some tokens here with the mazes, and you can take one whenever you want while you're doing the mazes (p.283)."

Instructions emphasized that the tokens were for helping the "Toy company" find out how well the designs were liked (not for the quality of performance or the total number completed).

The experimenter also commented that these tokens were

"your reward for helping us find out how well you like the new maze designs, so please feel free to take one whenever you want (p.283)."

The subjects knew that tokens could be exchanged later and that the more tokens they had, the better the prize would be.

The results showed that the treatment significantly affected the time spent doing mazes. A significant sex X treatment interaction was also found reflecting the greater persistence on mazes by boys, but not by girls, after success as compared to failure. Analysis of variance of the number of mazes completed produced a treatment effect that approached but did not reach significance ($P < .10$). On the measure of the number of tokens that the children took, the means indicated that subjects who had succeeded tended to take more tokens on a subsequent noncontingent task than those who had failed previously, but the effect was not significant ($P < .15$).

In a second experiment by the same authors (Mischel, Coates and Raskoff, 1968), when the two tasks (bowling and mazes) were presented sequentially the subjects who had previously succeeded took significantly more tokens than did those who had failed and those who were in the control group. No difference between the three groups was found when the two tasks were presented concurrently. In our experiments, if it is assumed that our helping task (sorting sheets) is boring and non-rewarding, we see that these results are enlightening. To spend a long time at a boring task may be perceived as appropriate and deserved by the failure subjects

just as failure subjects completed fewer mazes and took fewer tokens in Mischel et al.'s experiments.

However, it should be recalled that while doing mazes the subjects were simultaneously indulging themselves with valuable tokens in Mischel et al.'s experiment, thereby "helping themselves" and not just helping the experimenter, as is the case in our experiments. Indeed, the successful boys in Mischel et al.'s experiments tended to take somewhat more tokens than those who had failed, although the difference was not always significant. Thus the obtained differences may have reflected differences both in self-gratification and in helpfulness toward the experimenter (a female) and the two possibilities cannot be untangled.

Finally, as the authors remarked:

"it would be erroneous to interpret the overall results as suggesting that success as opposed to failure (or high as opposed to low self-esteem), necessarily leads to increased self-gratification in diverse settings (Mischel, Coates and Raskoff, 1968, p.389)."

That fact is evident in the specificity of the conditions under which success led to increased non-contingent self-gratification in their studies, that is, only in the sequential condition.

In summary, perhaps we are obtaining results on the effects of antecedent success and failure on altruism which conflict with other published studies because first, the

person in need of help is the experimenter who is aware of the subject's prior failure. The failure subjects may then help more than the success or control subjects in order to get the experimenter's approval. Presumably, the success subjects do not need this extra-approval to a great extent, and the control subjects need it to a lesser extent than the failure subjects but more than the success subjects.

Indeed in one of our previous experiments with male students (experiment III), it was found that the failure subjects helped more than the success or control subjects in terms of the number of hours volunteered index, but these two last groups were not different from each other. However, on the time spent helping the experimenter (sorting task), the failure subjects helped significantly more than the success subjects.

Finally, it is possible that the failure group may have helped more than the success group because they perceived the helping task as non-rewarding and boring (a self-punitive process is assumed here) and by doing the task, it compensated for their poor previous behaviour.

The literature offers conflicting views on this issue with Mischel, Coates and Raskoff (1968) suggesting that the resulting self-gratification pattern revealed no compensatory or self-therapeutic defensive tendencies after failure, and Schneider (1969), Weiner (1970) and Hoppe (1931) on the other hand, suggesting that it does. However Schneider

used male students as subjects (as in our experiments) and furthermore, he studied the effects of success and failure^o on self-presentation, in which another person was either in a position to give the subject an evaluation based on his presentation (feedback) or could not give the subject any information about his self-presentation (no feedback).

His hypotheses were that the failure-feedback subjects would be more positive than the failure-no-feedback subjects, and that the success-feedback would be more modest than the success-no-feedback subjects. Both predictions were confirmed at the .01 and .10 level of significance respectively. These data were interpreted by Schneider (1969) as reflecting a difference between success and failure groups in either salience of potential approval, or in strategies of getting approval. Thus, in our situation where feedback is actually given, a compensatory defensive tendency is possible.

Further, it also is possible that in our situation the failure subjects helped more than both the success and the control subjects in order to obtain the experimenter's approval (and thereby increased their situational self-esteem) and to compensate for their poor previous behaviour. Theoretically both processes may operate simultaneously.

When Krebs (1970) wrote his review of the literature on altruism, he could find only one study (Epstein and Hornstein, 1969) that lent itself to an expiation interpretation. If guilt is relieved by punishment, then it would be predicted that punished responses are less likely to extinguish than

responses that are not published. In fact Epstein and Hornstein (1969) found that selfish behaviour toward a disliked other increased, and altruistic behaviour decreased, when selfish behaviour was punished by a third person. However, due to the fact that selfish behaviour toward a liked other decreased after punishment, the generality of the findings is limited.

Since Kreb's review, the amount of direct and indirect evidence pointing to the existence of expiatory, self-sacrificial, or face-saving behaviour has been growing steadily. Brown (1969) who defined face-saving as sacrificing tangible rewards to avoid public humiliation, found, for example, that face-saving was greatest in a condition of evaluation by an audience as contrasted with a non-evaluative condition. Furthermore, he found in one of his experiments, that the overall correlation between degree of embarrassment and amount sacrificed was $+ .45$ ($P < .005$). These behaviours were interpreted as attempts to avoid looking foolish in public. Pruitt and Johnson (1970) and Johnson (1971) also recognized the existence of a need to maintain face in bargaining situations and suggested mediation as an aid to face-saving.

Bandura and Whalen (1966), in an extremely complex experiment, also uncovered an increase in self-reward following failure in some of their experimental conditions and Masters (1971), (1972) and Masters and Peskay (1972)

encountered evidence of self-therapeutic tendency after failure. Masters and Peskay (1972) found that white children showed increased noncontingent self-gratification following both success ("self-congratulation") and failure (" self-therapy"), but black children showed only "selfcongratulation". In another study, Masters (1972) predicted and confirmed that children would show generally increased self-reward following success experiences (as found by Mischel et al, 1968) and that self-reward following failure ("self-therapy") would increase only when it was noncontingently administered and/or during a task dissimilar to the one on which failure was experienced.

Thus self-gratification in the form of both self-congratulation and self-therapy does occur among children in our society. Masters (1972) offers the following general conclusions to this problem:

"Children in our society learn, generally, that self-gratification should be contingent upon successful performance at a task and most certainly should not appear contingent upon failure. However, when circumstances permit the clear discrimination between a current situation, during which rewards for noncontingent self-dispensation are present, and circumstances surrounding a prior experience of failure, increased self-gratification will occur (p.144)."

Other recent evidence more or less extends these conditions to include adults as well. Modigliani (1971) found that embarrassment is associated with efforts to improve

one's presented self through "facework", that is, attempts to correct, minimize, explain away, or excuse the deficient demeanor that originally precipitated the embarrassment. He found a +.42 correlation between reported embarrassment and his facework index (statements by the subject intended to improve his image in the eyes of the confederate). Furthermore, as Staub and Baer (1974) recently suggested, some people may go even further and use maneuvers that will minimize their involvement with other people's need. In fact, they found (Staub and Baer, 1974) that a number of subjects looked away after a first glance, when the victim was on the other side of the street. In this way involvement and possible embarrassment can be avoid by faking unawareness. Milgram (1970) also suggested that people in large urban areas are so frequently exposed to other's needs that they have to protect themselves if they are to maintain a private life. Thalhofer (1971) also discussed this self-protection possibility in relation to his findings:

"...that irrelevant help occurred when harm came by bureaucratic fiat "a condition that might have suggested help as atonement for a mistake imposed by society (p.150)."
(underlying is our)

Leventhal and Bergman (1969) tested the assumption that a member of a dyad who is underrewarded will sometimes engage in self-depriving behaviour, that is, he will further decrease his share of the reward. To test this, a subject

and a confederate were rewarded for performing a task in which their inputs were highly similar. They found that subjects given somewhat less than half the reward subsequently increased their share (equity). Among subjects given much less than half the reward, however, many decreased their share.

On the basis of their questionnaire data, these authors suggested that self-depriving behaviour of this sort is an instrumental response which reduces a threat to the subject's power. Though these findings are fully consistent with the view that self-depriving behaviour is a device for restoring power, they are correlational in nature and therefore somewhat ambiguous. The evidence provided by Schwartz (1970) on self-sacrificing behaviour; although collected in a field experiment, is also correlational.

However, Wallington (1973) and Kanfer, Cox, Greiner and Karoly (1974) provided more direct evidence on self-sacrificing behaviour. Wallington (1973) assessed the effects of transgression on self-aggression and depression. Confederate induced half of the subjects to transgress by deceiving the experimenter. As a measure of self-aggression all subjects gave themselves electric shocks of an intensity which they personally selected. Subjects were also given behavioural and subjective report measures of depression. Wallington (1973) found that transgressing subjects showed significantly more self-aggression. Transgressing subjects

also showed changes on behavioural measures of depression but not on subjective report measures. These findings suggested to Wallington that the altruistic behaviour observed after transgression may be engaged in for its self-punitive aspect as well as or rather than as a means of social restitution, as had previously been suggested. The finding by Kanfer, Cox, Greiner and Karoly (1974) that subjects who believed they had failed to meet contract conditions tolerated ice water longer than those who believed it had been the experimenter who had failed to meet conditions, is also supportive of this self-punitive tendency. Among similar lines, another recent experiment (Regan, Williams and Spurling, 1972) also directly demonstrated that voluntary expiation of guilt is a possibility. This was a field experiment to test the hypothesis that harm-doers would be more likely than controls to respond favorably to a naturally occurring opportunity for altruism, even in the absence of a direct request. Women in a shopping center were asked by a male experimenter to take his picture for a project. The camera would not work, and the experimenter either implied that the subject had broken the camera (guilt condition) or said that the malfunctioning was not her fault (control condition). Soon after, a female experimenter crossed the subject's path carrying a broken grocery bag from which candy fell. It was found that 55% of the subjects in the guilt condition

informed the second experimenter of her mishap, compared with only 15% of the control subjects. These results were interpreted as showing voluntary expiation of guilt.

Thus, with these last three studies (Wallington, 1973; Kanfer et al, 1974; Regan et al, 1972;), the evidence of self-sacrificing or expiatory behaviour is no longer exclusively correlational as was true of the Schwartz (1970) and Leventhal and Bergman (1969) studies but is, rather, experimental in nature.

The evidence reviewed in this section clearly supports the existence of face-saving, self-depriving and expiatory behaviours and moreover, it supports the contention that the altruistic behaviour found to occur after transgression (or failure) may be engaged in for its self-punitive aspect as well as a means of social restitution. Restoring or maintaining face does seem to be an important motivation in these situations.

In order to investigate these, a new experiment was conducted. The procedure of this experiment was generally the same as before except that the person in need of help was another person (same sex as subjects) who presumably, and in reality, had no knowledge of the subject's prior experience. The helping measures were the same (volunteering and sorting task) as in the previous studies. Given the conditions of this investigation, two patterns of results seem possible.

First if the success group helps more than the failure group, then this would support the hypothesis that a need for "approval" might have been in operation in our previous experiments. On the other hand, if the failure group continues to help more than the success group, we would have to seriously consider the possibility that the failure subjects are compensating in order to reduce their low self-esteem.

Experiment V

Let us briefly review the procedure of this experiment before summarizing the results. All subjects were randomly selected male first year university students who were then randomly assigned to one of the three treatments (success, failure or control).

When a subject arrived at the laboratory, he was told by a female experimenter¹ that he would take part in two separate experiments; the one in their present location and a second in another room with a different experimenter. After the subject had completed the first experiment which included personality questionnaires and manipulations of success and failure on the motor task or control condition, he was paid \$1.00 for his participation (about 20 to 25 minutes) and he was told where to go for the second experiment.

Success and failure continued to be defined as the subject's performance prediction, established after the five

1...I wish to thank Anita Fournier for serving as an experimenter in this experiment.

practice trials on the motor task, plus or minus two perfect trials. There were twenty trials on the motor task and the control subjects completed as usual a third personality questionnaire instead of performing the motor task. When the subject arrived in the second laboratory, he was told by a male experimenter that the experiment required two persons, so that he would have to wait for the second subject before they could begin. A two-person prisoner's dilemma set-up was permanently installed in the room so that the subject would not be suspicious of whether another subject actually was supposed to show up.

While waiting for the other person, the subject was asked to complete a sheet on which he could volunteer for additional experiments (the same volunteering sheet as before). After the completion of this sheet and an additional three minutes of waiting, the experimenter told the subject that he did not think the other subject would show up since he was already very late and using the same subterfuge as in previous studies, the experimenter then asked the subject if he would help him by sorting some sheets for him. The exact number of sheets sorted as well as the time spent sorting sheets were recorded for each subject. A total of thirty subjects were run in this experiment, ten subjects per treatment.

Manipulation Check

At the termination of the first experiment, all

subjects were given, as usual, a questionnaire to complete at home. The data obtained from the questionnaire, concerning how well the subject thought he did on the motor task, are summarized in table VI.

 Insert Table VI about here

As can be seen from this table, the success subjects thought they did significantly better than the failure subjects ($t_{13} = 2.42$, $P < .025$, one-tailed). It is clear that the manipulations of success and failure were successful.

Results

The results of Kruskal-Wallis one-way analyses of variance computed on four indices of helping behaviour are presented in table VII.

 Insert Table VII about here

As this table shows, one index, the time spent sorting sheets, reached significance ($H = 13.5$, $P < .01$, two-tailed). All other indices are non significant. Mann-Whitney U tests between treatments were computed on this significant index of helping behaviour in order to find out which treatments significantly differed from each other and these results are presented in figure 8.

 Insert figure 8 about here

Table VI

Manipulation check

Experiment V

Treatments	success	failure
Mean	5.55	4.00
Standard deviation	.52	1.54
N ¹	9	6
	$t_{13} = 2.42, P < .025$ one-tailed	

1... Some subjects did not return the post-experimental questionnaire.

Table VII

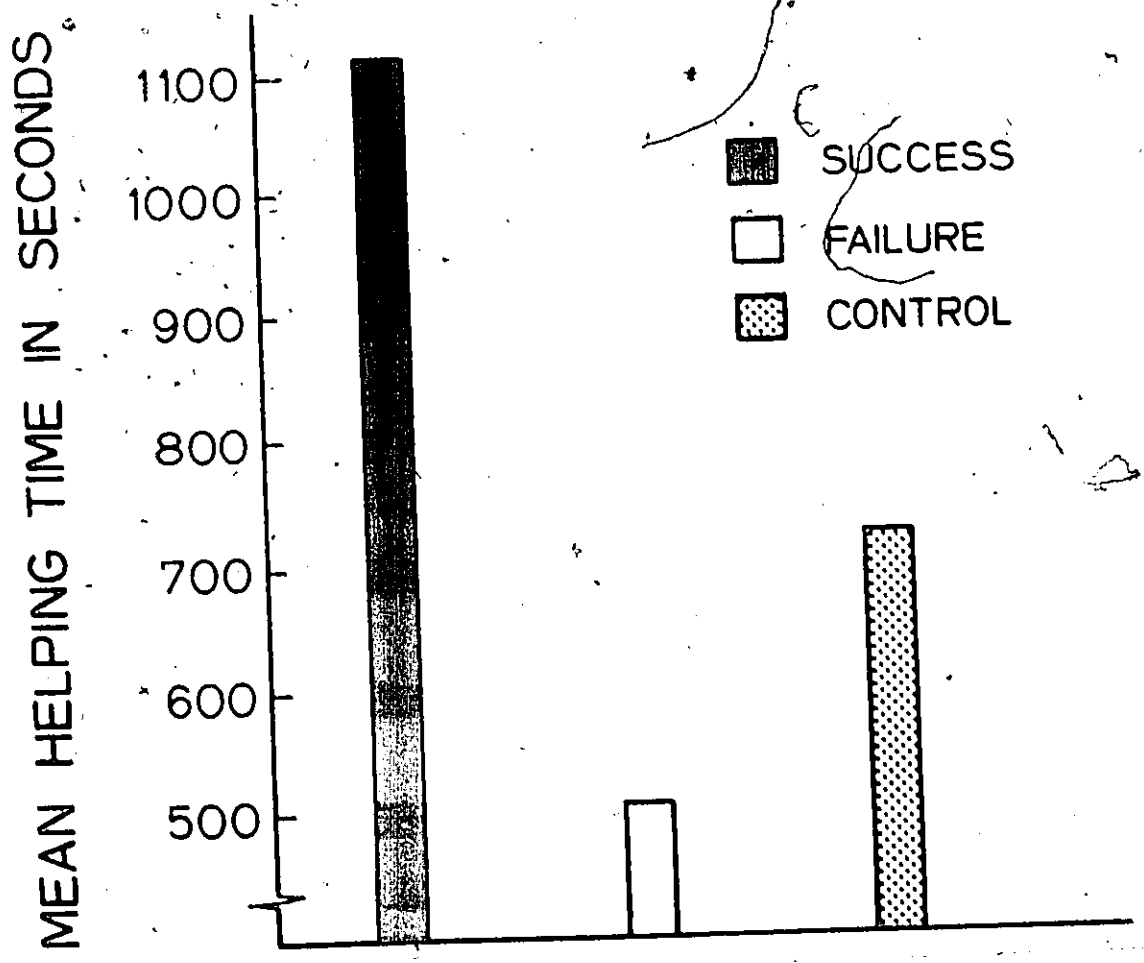
Kruskal-Wallis Anova

Experiment V

INDICES OF HELPING				
SORTING TASK			VOLUNTEERING TASK	
	helping time	# sheets	#experiments	# hours
H	13.5	1.57	0.002	0.06
P	< .01	N.S.	N.S.	N.S.

FIGURE 8

EXPERIMENT V



As shown in this figure and as revealed by statistical tests, a complete reversal of the previous data trends was obtained. The success group ($\bar{X} = 1119.7$, S.D. = 334.8) helped significantly more than both the failure ($\bar{X} = 511.8$, S.D. = 243.4) ($U = 7$, $P < .002$, two-tailed) and the control ($\bar{X} = 727.1$, S.D. = 215.9) ($U = 17$, $P < .02$, two-tailed) groups, and the control group was found to help significantly more than the failure group ($U = 20$, $P < .05$, two-tailed). Two-tailed tests were computed here since this was the first study with these conditions. Thus when the person in need of help is a third person who does not know about the subject's prior success or failure on an antecedent task, the results of Berkowitz and Connor (1966) and of Isen (1970) were replicated. In other words, the success subjects helped more than the controls who, in turn, helped more than the failure subjects. Given these results we can now be confident that we have isolated a crucial factor, namely whether the person in need of help is the same and is aware of the subject's prior performance or is a different person and does not know the subject's prior performance on the antecedent task. This explains the seemingly conflicting results. Therefore, the finding that the failure subjects helped the experimenter more than the success subjects (given same sex of subject and experimenter) obtained repeatedly in our previous studies, can be understood as a strategy used by the failure subjects

to obtain the experimenter's approval as suggested by Hoppe (1931), Schneider (1969) and Weiner (1970).

Furthermore, as indicated by Staub's (1968) and Isen's (1970) findings and substantiated by our results, a contractual setting as used in Berkowitz and Connor's (1966) study is not a necessary condition to obtain the result that success subjects help more than failure subjects. It appears that both Isen's (1970) and our own findings are genuine since both outcomes can be obtained depending upon whether the same experimenter or a different experimenter is used.

Finally, since we used different manipulations of success and failure than both Staub (1968) and Isen (1970), our replication adds some generality to the findings.

Summary

A quotation by Festinger is relevant here:

"Let us imagine that a research worker is concerned with investigating whether or not a relationship exists between certain specified environmental conditions and some specific behaviour. Let us also imagine that there is some unknown variable "X" such that when "X" is low in magnitude, he would find a positive relationship between the environmental conditions and the behavior, and when "X" is high in magnitude the relationship between the environmental variables and the behavior in question would be reversed and negative.

Now suppose that this research person engaged in a sampling procedure which was so biased that he obtained in his sample only people who were high on this unknown variable "X" of which the research worker was completely unaware. He would then obtain a negative correlation between his environmental variable and the behavior and would undoubtedly come to the conclusion that a negative

relationship existed. It is clear that he would have come to a partially incorrect conclusion. But the important question is whether, if the research worker was in ignorance concerning the importance of variable "X", could he possibly have come to a fully correct conclusion with better sampling? Let us assume that he did the study with the most accurate and beautiful methods. He would then have obtained a sample in which the variable "X" was distributed over the entire range and since this variable affects the direction of the relationship his data would undoubtedly show a zero relationship overall between his environmental and behavior variables. Thus with perfect sampling, he would come to the conclusion that his environmental and behavior variables were not related to one another at all. This, it is clear, would also be an incorrect conclusion. It would, thus, seem that as long as the research person is ignorant of the fact that variable "X" is a relevant variable, he could not possibly come to a correct conclusion.

The question then becomes: what procedure would make it more likely that an investigator would develop some idea concerning variable "X" and hence discover its relevance? It is conceivable that an investigator could have, by accident, measured variable "X" and in the course of general exploration and analysis of his data, discovered its relevance, but this kind of accident is a relatively rare thing. More often the way such a hitherto unknown variable is discovered as relevant is by trying to reconcile contradictory results. One person may do a study and find a negative relationship between two variables. Another person, attempting to repeat the study, may find no relationship or a positive relationship. Someone may then get some hunch as to why this difference between the two studies exists which then leads to the discovery of the importance of variable "X" (1959, p.262-263).

This is exactly what has been done in the present research. Our experiments have repeatedly demonstrated the existence of a negative relationship between success and helping behaviour. Other studies (Berkowitz and Connor, 1966; Staub, 1968; Midlarsky, 1968a; Isen, 1970;) however had reported

a positive relationship between the two variables. Careful scrutiny of all these studies and their procedures led to a hunch as to why this difference existed and this then led to the specification of the important variable. Whether the person in need of help is the same and knows the subject's prior performance or is a different person who does not know the subject's prior performance seems to be the crucial factor accounting for the apparently contradictory results.

Experiment VI

The purpose of this experiment was to increase the power of our manipulations of success and failure as well as to add two new control groups in order to anticipate possible criticisms of our design. Our criticism of the design used in all previous experiments is that, although the success and failure groups were treated similarly in all respects except on how well they did on the motor task, the control group was treated differently. Unlike the subjects in the experimental groups, those in the control group did not perform the motor task but instead completed a questionnaire of about the same duration as the motor task. Because of this difference, it could be argued that the success and the failure subjects experienced more social interaction with the experimenter than did the control subjects. This may be a reason why it was sometimes found that the control

group was less helpful than both experimental groups (see figures 2 and 3).

Procedure

In order to respond to this criticism and to increase the power of the manipulations, it was decided to conduct a new experiment with four experimental treatments. The success subjects would receive their performance prediction plus five perfect trials instead of plus two and the failure subjects would be given their performance prediction minus five perfect trials on the motor task. A control group would also perform the motor task but would receive their performance prediction exactly. This takes the form of a parametric study with three levels of success: performance prediction plus five perfect trials (success), performance prediction (control), and performance prediction minus five perfect trials (failure).

A second control group was added in order to more accurately control individual interpretations of an intermediate performance on the motor task. It could be argued that achieving the performance prediction might be perceived as success by subjects who set it at a high level and as failure by subjects who deliberately set it low in order to be sure to attain it. We attempted to control this possibility in the following manner.

The subjects in this control group, herein called

the no-feedback group, could not see the motor task scale as they performed the task and thus could not see whether they succeeded or failed on any given trial. A board hid the scale from the subject and a box full of sponges placed under the scale made it impossible for the subject to hear when the ball fell. Actually, the ball was never put on the magnet since the subject could not see it anyway, but the experimenter took great care to act as if he was putting the ball back on the magnet after every trial so as not to arouse the subject's suspicion. Since the weight of the steel ball represent a very small proportion of the total weight of the platform with the ball on, no change in tension in the cord could be detected by the subjects. Subjects in this group had to pull the string all the way up on every trial since they did not know whether the ball was still on or not at any moment. These subjects were never told their exact score but instead were told that they achieved what seemed to be an "average" performance. Therefore, in terms of helping behaviour, this no-feedback group should be in between the two experimental groups and should be very close to the subjects in the other control group who achieved an intermediate performance score on the motor task.

Since the help was requested by the same experimenter who also knew of the subject's performance on the motor task, it was expected that the failure group would help more than

the two control groups and the success group, and the two control groups would help more than the success group. The two control groups should not be different from each other.

All subjects in this experiment either were told by the male experimenter, or actually achieved two instead of three perfect trials out of the five practice trials. This was done in order to lower their performance prediction so as to leave some "room" to implement the new manipulations of success and failure.

Ten randomly selected male first year university students were randomly assigned to each of the four treatments, for a total sample of forty subjects. The exact manipulations were implemented in all cases except one, in which a subject set such a high performance prediction (17) that it was necessary to give him all (20) perfect trials since he had been randomly assigned to the success condition previously. As usual all subjects were paid \$ 1.00 for their participation. The rest of the procedure was identical to that used in the previous experiments, that is, all subjects were asked by the same experimenter to volunteer for additional experiments and to help him with the sorting task. All parts of this experiment were conducted in the same room.

Manipulation Check

The data collected from the post-experimental questionnaire concerning how well the subjects thought they

did on the motor task are summarized for each group in table VIII.

 Insert Table VIII about here

As seen in this table and as supported by t-tests, the success subjects thought they did significantly better than the failure subjects ($t_{15} = 4.45$, $P < .0005$, one-tailed), as well as better than both the control ($t_{14} = 2.73$, $P < .01$, one-tailed) and the no-feedback ($t_{14} = 4.37$, $P < .005$, one-tailed) subjects. The failure subjects tended to think they did worse than both the control ($t_{15} = 1.15$, $P < .15$, one-tailed) and the no-feedback ($t_{15} = 1.23$, $P < .15$, one-tailed) subjects. Finally there was no difference between the control and the no-feedback treatments on these data ($t_{14} = 0.19$, N.S., two-tailed).

Thus overall, the manipulations of success and failure, as well as intermediate performances were quite successful.

Results

Results of Kruskal-Wallis one-way analyses of variance computed on four indices of helping behaviour are presented in table IX.

 Insert table IX about here

As summarized in this table, three indices of helping behaviour reached significant levels. These are the time

Table VIII

Manipulations Check

Experiment VI

	Success	Control	No Feedback	Failure
Means	6.0	4.25	4.12	3.33
Standard Deviation	0.75	1.66	0.99	1.65
N ¹	8	8	8	9

1... Some subjects did not return the questionnaire.

Table IX

Kruskal-Wallis Anova (df = 3)

Experiment VI

	INDICES OF HELPING			
	SORTING TASK		VOLUNTEERING TASK	
	Helping time	# of sheets	# of experiment	# of hours
H	8.408	11.512	9.143	6.87
P	< .05	< .01	< .05	N.S.

spent sorting sheets for the experimenter ($H = 8.408$, $df = 3$, $P < .05$), the number of sheets sorted ($H = 11.512$, $df = 3$, $P < .01$) and the number of experiments volunteered for ($H = 9.143$, $df = 3$, $P < .05$). The number of hours volunteered, however, was not significantly different between treatments ($H = 6.87$, $df = 3$, N.S.).

Individual comparisons between treatments following an overall significant H-test were made by means of Mann-Whitney U test and are presented in table X.

 Insert Table X about here

These data are also presented graphically in figures 9, 10, and 11, representing, respectively, the data obtained on the time spent sorting sheets, the number of sheets sorted and the number of experiments volunteered for.

 Insert figure 9 about here

 Insert figure 10 about here

 Insert figure 11 about here

As can be seen from table X and from figures 9 and 10, the patterns of results on the first two indices of helping behaviour are identical, as expected, since the number of sheets sorted is positively correlated with the

Table X

Mann-Whitney U statistic on 3 helping indices.

Experiment VI

Helping indices	Comparisons	U	P, one-tailed	order of helping ¹ .
helping time	success vs failure	3	.001	1) failure 2) control 3) success 4) no feedback
	success vs control	45	N.S.	
	failure vs control	21	.025	
	success vs no feedback	46	N.S.	
	failure vs no feedback	2	.001	
	control vs no feedback	40.5	N.S.	
number of sheets	success vs failure	8.5	.001	1) failure 2) control 3) no feedback 4) success
	success vs control	35	N.S.	
	failure vs control	27	.05	
	success vs no feedback	41.5	N.S.	
	failure vs no feedback	14	.01	
	control vs no feedback	40	N.S.	
number of experiments	success vs failure	42	N.S. ²	1) no feedback 2) failure 3) control 4) success
	success vs control	50	N.S.	
	failure vs control	40.5	N.S.	
	success vs no feedback	16.5	.02	
	failure vs no feedback	18	.02	
	control vs no feedback	20.5	.05	

1...From most to least

2...Two-tailed

FIGURE 9

EXPERIMENT VI

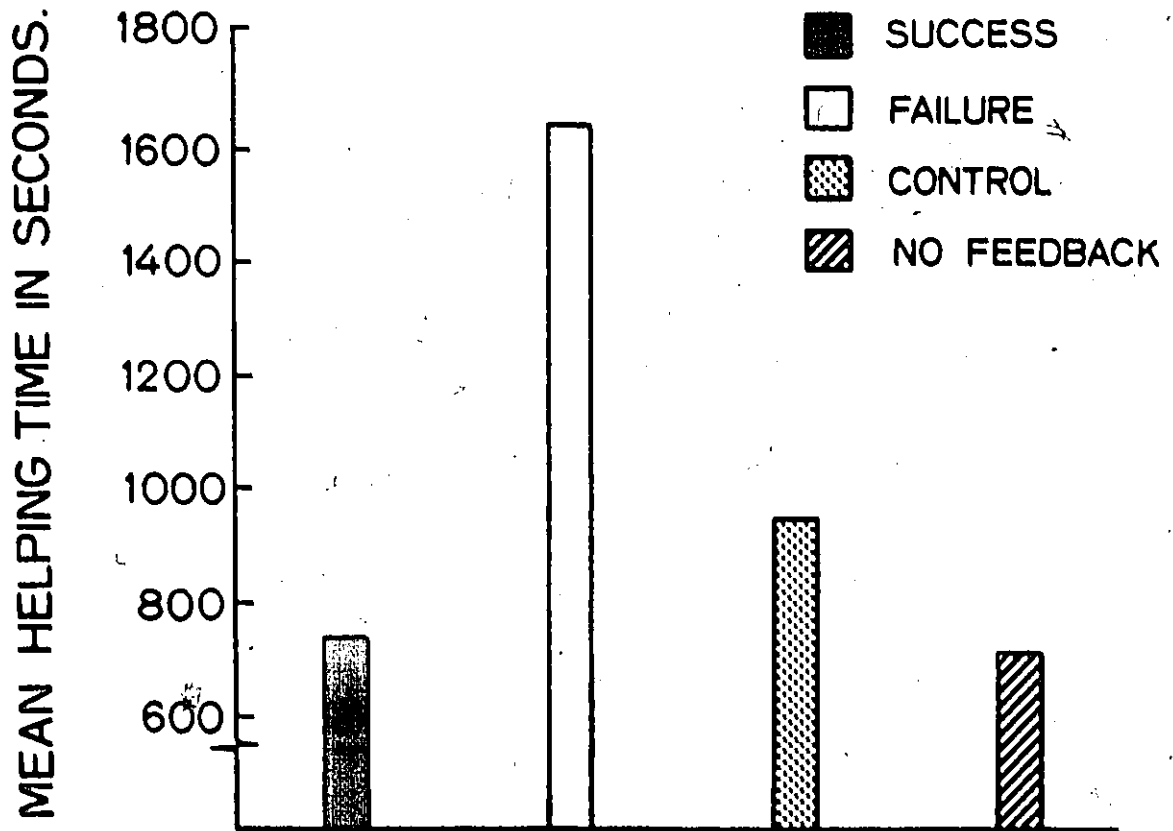


FIGURE 10

EXPERIMENT VI

MEAN NUMBER OF SHEETS SORTED

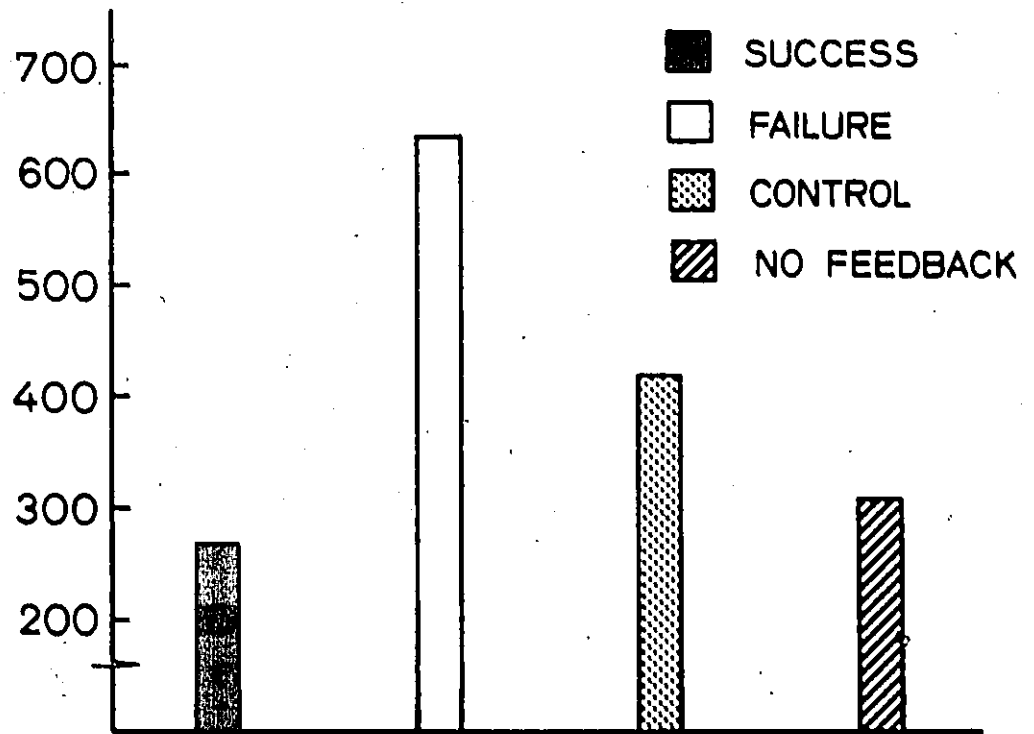
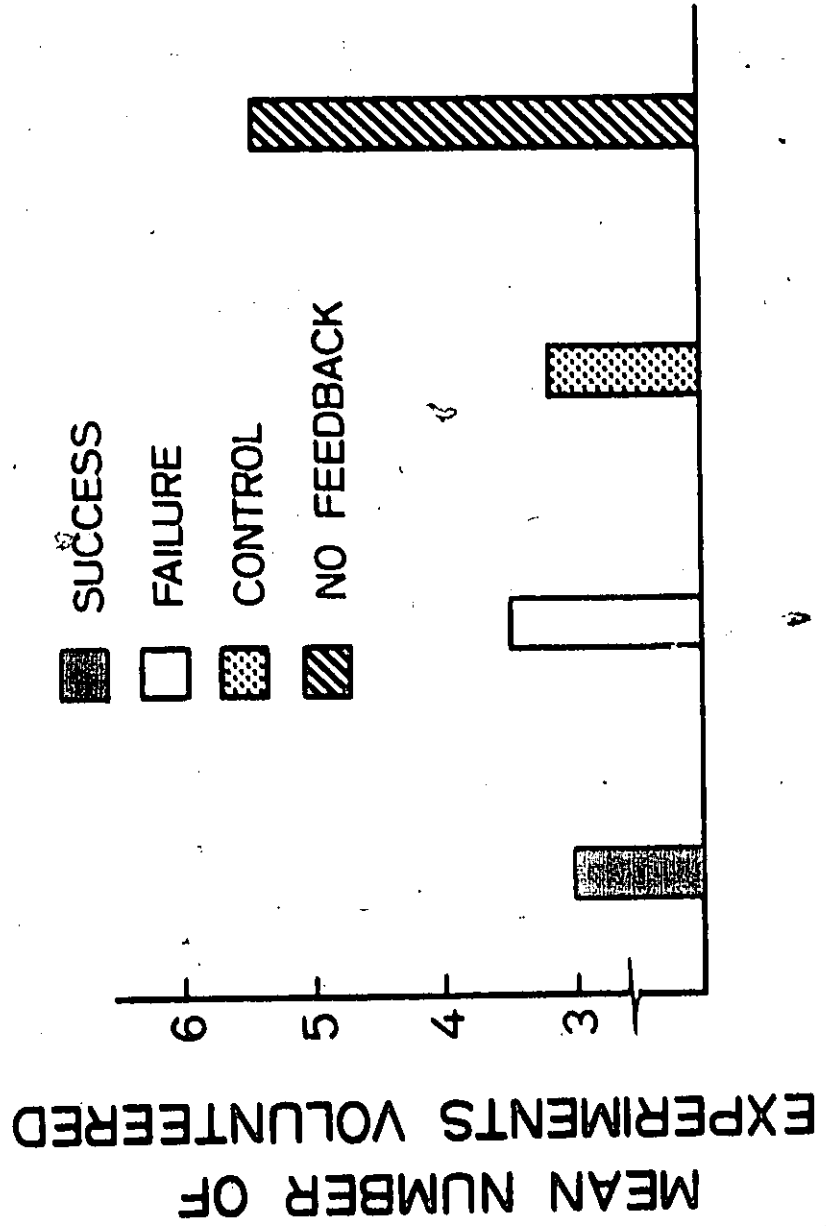


FIGURE 11

EXPERIMENT VI



time a subject spent sorting. Furthermore, most of our predictions concerning these two indices are supported. The failure subjects helped significantly more than the success subjects ($P < .001$) on both the time spent sorting sheets. (failure: $\bar{X} = 1661.0$, S.D. = 295.6) (success: $\bar{X} = 739.6$, S.D. = 279.0) and the number of sheets sorted (failure: $\bar{X} = 645.3$, S.D. = 240.6) (success: $\bar{X} = 271.4$, S.D. = 140.6). The failure subjects also helped significantly more than the control subjects (time: $\bar{X} = 978.6$, S.D. = 648.1) (number: $\bar{X} = 422.9$, S.D. = 280.9) on these two indices ($P < .025$ and $P < .05$ respectively), and they helped more than the no-feedback ($P < .001$ and $P < .01$ respectively). Finally, the control and the no-feedback subjects (time: $\bar{X} = 715.6$, S.D. = 308.6) (number: $\bar{X} = 308.9$, S.D. = 127.2) were not significantly different from each other on these two indices of altruism. The four findings are exactly as predicted from the previous results and significance levels. Generally improved substantially with the use of the more powerful manipulations of success and failure.

The prediction that the control and the no-feedback subjects would help more than the success subjects did not reach significance on these two indices of helping behaviour, but in three out of four cases, the results are in the expected direction, that is, control group helped more than the success group on both indices, and the no-feedback group

helped more than the success group on one index, the number of sheets sorted, but not on the other, the time spent sorting sheets.

Concerning the third significant index, the number of experiments volunteered for, none of our general predictions were confirmed. No significant differences between the success ($\bar{X} = 3.0$, S.D. = 1.94), the failure ($\bar{X} = 3.5$, S.D. = 1.64) and the control groups ($\bar{X} = 3.2$, S.D. = 2.39) were found, but the no-feedback group ($\bar{X} = 5.5$, S.D. = 1.58) differed significantly from all these groups (see figure 11). The no-feedback subjects volunteered for more experiments than the success subjects ($P < .02$) as predicted, and for more than the failure subjects ($P < .02$) contrary to predictions; finally, they also volunteered for more experiments than the control subjects ($P < .05$), a contrast that should have been non significant according to predictions. Since this index, the number of experiments volunteered for, had never been significant in our previous studies, the statistics are two-tailed.

Thus, the overall significant H test obtained on this index was due entirely to the no-feedback subjects volunteering for more experiments than subjects in any of the other groups. This is an interesting and intriguing finding in view of the fact that the four treatments do not differ in the number of hours volunteered for. Concerning the nature

of this finding, the only comment that can be made at this time is that there seems to be something in this no-feedback treatment that makes subjects willing to volunteer for many more experiments. From these subjects' statements after the completion of the motor task as well as just before they left the laboratory, it seems that this no-feedback condition somehow arouses more "curiosity" and this may be why these subjects volunteered in general for more experiments. However, this finding should not be taken too seriously without further corroboration since the number of hours volunteered and the amount of money asked per hour of participation were not significantly different between the four treatments.

Finally, and this is a convincing finding, on all three significant indices of helping behaviour shown in table X, the order of the groups in terms of helping behaviour is always the same as long as we are concerned only with the two experimental groups and the control group. Indeed, the failure group always helped more than the control group, which, in turn, always helped more than the success group. The position of the no-feedback group in this order of helping behaviour varies depending upon the index used.

Summary

This experiment replicated the major findings for the fourth time in that failure subjects helped a person who knew of their prior performance on the motor task more

than success or control subjects, and further, with this experiment, we now have evidence that subjects who had achieved an intermediate performance score on the motor task (control) helped such a person more than those who had succeeded.

In addition, when individuals do not directly perceive how they are performing on the task and are told that their performance is "average" then, in general, these individuals helped the experimenter more than success subjects (sorting task) and less than failure subjects as expected. However, these individuals are likely to volunteer for more experiments, although not for more hours than the subjects in the other groups.

This experiment also demonstrated that the differential amount of social interaction with the experimenter between the experimental subjects and the control subjects was an important variable that should have been controlled in previous studies since when it is equal across all treatments, as in this experiment, better and more clear-cut results are obtained. However, the more significant results obtained here may also have been caused by the more powerful manipulations used in this experiment. Since both changes were implemented simultaneously in a single experiment, it is impossible to assess their relative contributions to the results. But, nevertheless, in this experiment only

one factor varied across treatments, that is, the performance level achieved on the motor task, and similar results as those reported in previous studies were found. Thus, differences in performance levels appeared to have caused the effects.

These findings support the hypothesis that the failure subjects helped the experimenter more than other subjects in order possibly to obtain his approval, or in order to repair his self-image in the eyes of the experimenter, since it was shown in a previous study that when the person in need of help was a third party who did not know of the subject's prior performance (see experiment V), the failure subjects helped less than the success or control subjects.

In view of the significant results obtained in experiments III and VI both of which employed the same experimenter throughout, and in view of the reversal of the results evidenced in experiment V which used a different experimenter who did not know of the subject's prior performance on the motor task, we can now be more confident that a critical factor affecting helping behaviour has been isolated, namely, whether the person in need of help is the same and knows of the subject's prior performance or is a different person who is unaware of the subject's prior performance. However this conclusion is reached from results obtained in three different experiments which differed from

each other in many respects. A more experimentally appropriate procedure to test the importance of this factor would be to conduct a factorial experiment in which one factor is whether the person in need of help is the same and knows of the subject's prior performance or is a different person who is unaware of the subject's prior performance. This is what was done in experiment VII.

Experiment VII

There are many differences between the experiments on which the conclusion concerning the importance of the critical factor was based beside variations in that factor. For instance, in experiment III one room was used and the experimenter was a male. In experiment V, on the other hand, two rooms were used as well as two experimenters, a female and a male. These two experiments were also conducted one after the other so that the period of the year was not held constant across the two experiments. Any of these differences may have contributed to the contrasting results obtained in these studies.

In order to test the reliability of the critical factor, another experiment was conducted in which all variables were held constant except whether the person in need of help was the same throughout the experiment and therefore know of the subject's prior performance on the motor task or was a different person who was unaware of the

subject's prior performance. In this manner, alternative explanations of the contrasting results would be eliminated.

Procedure

In this experiment, it was decided to employ the more powerful manipulation of success and failure so that the possibility of clear-out results would be maximized as demonstrated in experiment VI. Thus, success was the subject's performance prediction plus five perfect trials and the failure was the subject's performance prediction minus five perfect trials. Subjects in the control group performed the motor task and were made to achieve their performance prediction. Only these three treatments were included in this study.

When a subject arrived at the laboratory, he was told by a male experimenter¹ that he would take part in two separate experiments; the one in their present location and the second in another room. After the subject had completed the first experiment which included personality questionnaires and manipulations of success, failure or control on the motor task, he was paid \$1.00 for his participation and it was indicated to him where to go for the second experiment. To this point the procedure was identical to that used in experiment V except that the first experimenter was a male instead of a female, and the definition of success and failure was more powerful.

1...I wish to express my thank to Chester Fedoruk for his help as an experimenter in this study.

Next, a difference in the procedure was introduced. For half the subjects, randomly selected, in all treatments, the second experimenter was the same as in the first experiment and therefore this person knew of the subject's prior performance on the motor task. For the other half of the subjects, a new male experimenter served as the experimenter for the second experiment. This person of course did not know of the subject's prior performance in the first experiment.

Once in the second laboratory, the subject was told by the male experimenter in question that the experiment required two persons, so that he would have to wait for the second subject before they could begin. As in experiment V a two-person prisoner's dilemma set-up was permanently installed in the room so that the subject would not be suspicious of whether another subject actually was supposed to show up.

The rest of the procedure was identical to experiment V, that is, the other "subject" failed to appear and volunteering measures were taken first and then the experimenter asked the subject to help him with the sorting task.

A total of thirty first year male undergraduates, randomly selected, were run in this 2 (same versus different experimenter) x 3 (treatments) factorial design. Each of the six cells of the design included five subjects.

Manipulation check

All the subjects at the termination of the first experiment were given a questionnaire to complete at home. The data obtained on the question concerning how well the subjects thought they did on the motor task are summarized in table XI.

 Insert Table XI about here

As seen in this table and as is revealed by t-tests, the success subjects thought they did significantly better than both failure ($t_{13} = 4.76$, $P < .0005$, one-tailed) and the control ($t_{13} = 1.786$, $P < .05$, one-tailed) subjects. The control subjects also thought they did significantly better than the failure subjects ($t_{14} = 2.215$, $P < .025$, one-tailed). Thus our manipulations were successful.

Results

Results of Kruskal-Wallis one-way analyses of variance computed on five indices of helping behaviour are presented in table XII.

 Insert Table XII about here

As this table indicates, none of the volunteering indices reached significance. However the two sorting task indices reached acceptable levels of confidence. These are the time spent sorting sheets ($H = 16.46$, $df = 5$, $P < .01$,

Table XI

Manipulations check

Experiment VII

TREATMENTS	SUCCESS	CONTROL	FAILURE
MEANS	5.71	4.37	2.62
STANDARD DEVIATION	1.11	1.76	1.4
N ¹	7	8	8

1...Some subjects did not return the questionnaire.

Table XII

Kruskal-Wallis Anova (df = 5)

Experiment VII

INDICES OF HELPING					
	SORTING TASK		VOLUNTEERING TASK		
	time	# sheets	# expts	# hours	ratio: \$/hour
H_0^1	16.46	14.38	8.156	1.81	7.266
P	<.01	<.02	N.S.	N.S.	N.S.

1...All H tests are corrected for tied ranks.

two-tailed) and the number of sheets sorted for the experimenter ($H = 14.38$, $df = 5$, $P < .02$, two-tailed).

Mann-Whitney U tests between treatments were computed on these two significant indices and the results obtained on the number of sheets sorted are presented in figure 12, and those on the time spent sorting sheets are presented in figure 13.

 Insert figure 12 about here

 Insert figure 13 about here

As can be seen from these last figures, the patterns of results on both indices are identical. The results of the U tests (all are one-tailed) indicated that when the experimenter was different and therefore did not know the subject's prior level of performance the success subjects ($\bar{X} = 428.4$, $S.D. = 136.0$) sorted more sheets ($U = 0$, $P = .004$), and did so for longer periods of time ($\bar{X} = 1422$, $S.D. = 448$) ($U = 0$, $P = .004$) than the failure subjects (number: $\bar{X} = 1212$, $S.D. = 119.5$) (time: $\bar{X} = 296$, $S.D. = 346$). The success subjects also tended to sort more sheets ($U = 5$, $P = .075$) and spent longer periods of time at it ($U = 3$, $P = .028$) than the control subjects (number: $\bar{X} = 301.2$, $S.D. = 110.4$) (time: $\bar{X} = 753$, $S.D. = 262$). Finally the control subjects sorted more sheets ($U = 3$, $P = .028$) and spent more time at it ($U = 3$, $P = .028$).

FIGURE 12

EXPERIMENT VII

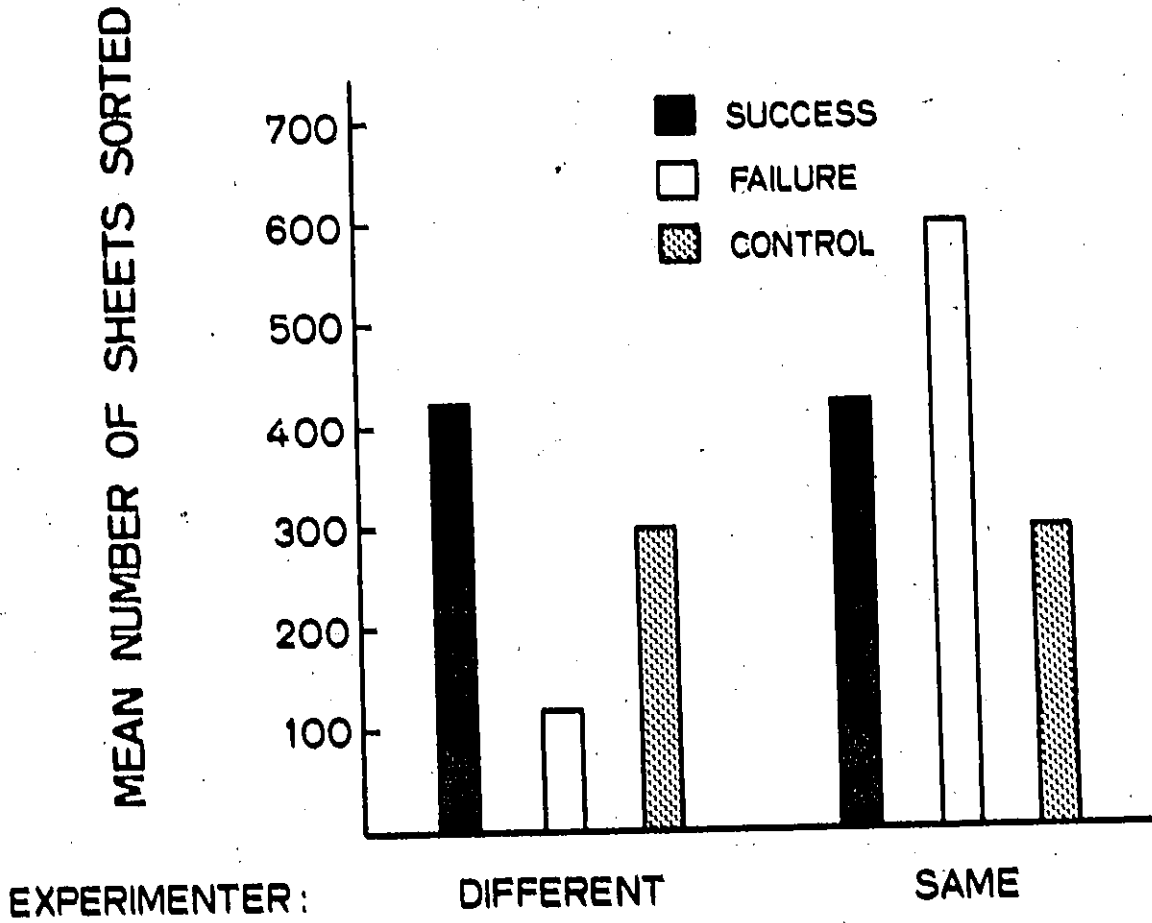
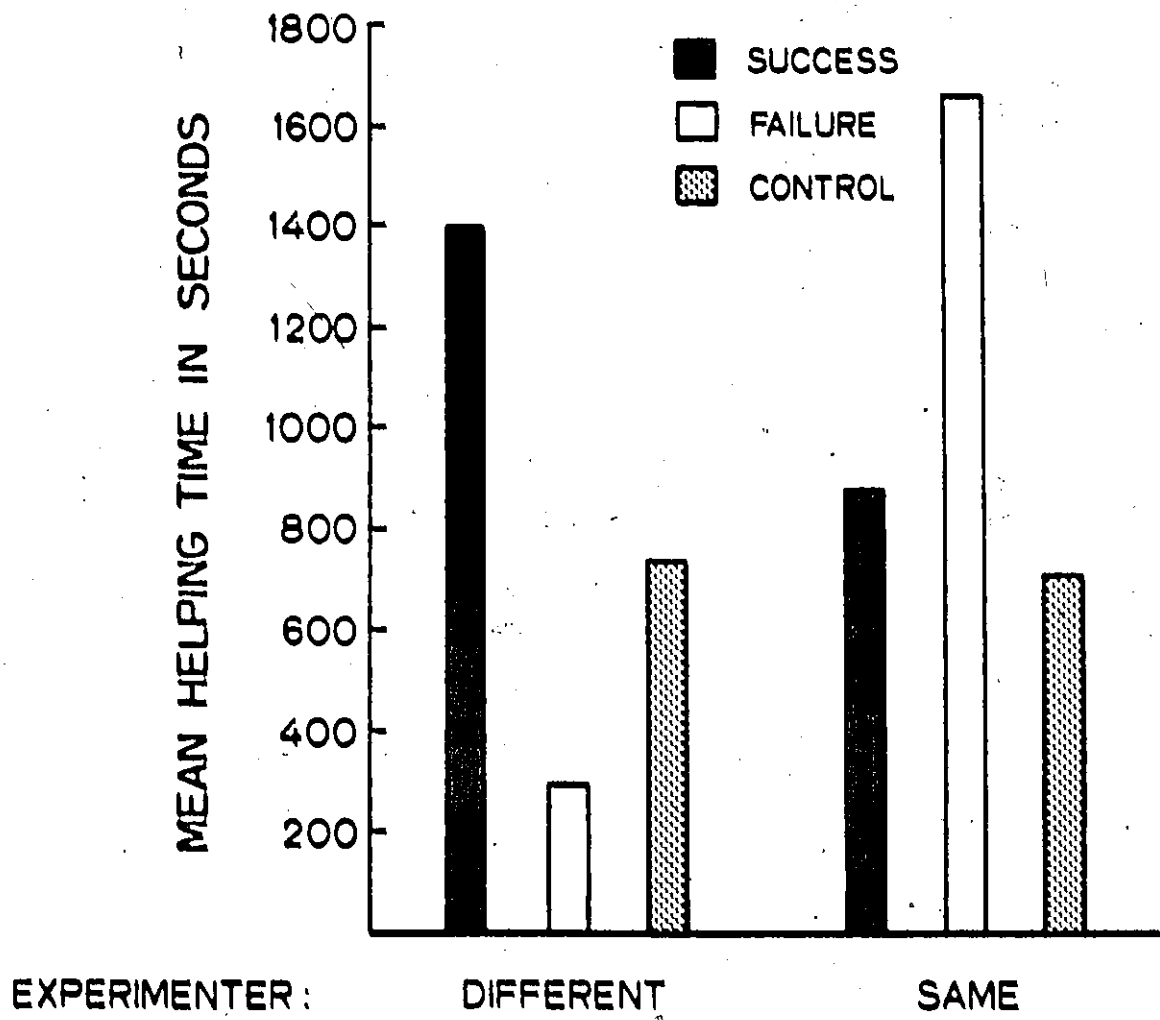


FIGURE 13

EXPERIMENT VII



than the failure subjects. These results replicate those reported in experiment V in which a different experimenter who did not know of the subject's performance was used.

On the other hand, when the experimenter was the same and therefore knew of the subject's prior performance on the motor task, a reversal of the findings was observed. The failure subjects ($\bar{X} = 604.8$, S.D. = 245.4) tended to sort more sheets ($U = 6$, $P = .11$) and did so for significantly longer periods of time ($\bar{X} = 1694$, S.D. = 237) ($U = 1$, $P = .008$) than the success subjects (number: $\bar{X} = 425.8$, S.D. = 200.5) (time: $\bar{X} = 894$, S.D. = 334). The failure subjects also sorted more sheets ($U = 4$, $P = .048$) and did so for longer periods of time ($U = 1$, $P = .008$) than the control subjects (number: $\bar{X} = 299.0$, S.D. = 254.2) (time: $\bar{X} = 726$, S.D. = 584). Finally, no differences were found between the success and the control subjects on these two indices. These results replicated for the fifth time the finding obtained previously under similar conditions.

Although in this experiment some levels of significance are below the acceptable level, especially in the same experimenter conditions, the findings are nevertheless impressive since first, these were demonstrated with only five subjects per treatment, and second, these have been replicated five times in succession. The chance probability of such a series is extremely low.

In conclusion, this experiment clearly demonstrates

that whether the person in need of help is the same experimenter and knows of the subject's prior performance on the motor task or is a different person who is unaware of the subject's prior performance is a relevant variable. When the person in need of help was the same throughout the experiment and thus knew the subject's performance, failure subjects were found to help more than success subjects, but when a different person who did not know of the subject's performance was used then the success subjects were found to help more than the controls who themselves helped more than the failure subjects.

This conclusion, however, may be limited in its generality. In all experiments reported so far the motor task has always been described in the instructions as a skill or ability related task. It would be worthwhile to determine if similar results could be obtained given that the subjects thought their performance on the motor task was purely due to luck or chance rather than skill. This was the topic of our investigation in experiment VIII.

Experiment VIII

People in the real world sometimes succeed because of good luck or fail because of bad luck. Such a chance event may produce different effects on the subject's behaviour

than success or failure events related to skill. To our knowledge, this factor has never been investigated in relation to altruism.

Procedure

This experiment was identical to study VI, that is, the same experimenter was employed throughout and success and failure were defined as the subject's performance prediction plus or minus five perfect trials. The control group were made to achieve their performance prediction. The instructions, however, were slightly changed. These emphasized that performance on the motor task has been consistently found both in Canada and in United States to be luck related. The exact instructions are shown in appendix I (see II).

All subjects were made to achieve two out of the five practice trials and subsequently they performed twenty trials. Once the motor task was completed, all subjects were asked by the same experimenter to volunteer for additional experiments and to help him with the sorting task.

Ideally a 2 (same versus different experimenter) x 3 (treatments) x 2 (skill versus luck) factorial design would have given us more information. Unfortunately this could not be used because we wanted to employ the same population as before, that is first year university students and the regular academic year was ending in two weeks. From previous experience we knew that only thirty subjects at most could

be run within that short time span. Since more data had been collected using the same experimenter throughout in previous studies, it was decided to do the same in this experiment.

What kind of results could be expected from this experiment? Since the assistance is requested by a person who knew of the subject's prior performance on the motor task, perhaps the failure subjects should be expected to continue to help the experimenter more than the successful and control subjects as had been repeatedly found in previous experiments. However, in those prior studies it has been argued that the failure subjects helped more in order to obtain the experimenter's approval or to repair their self-image in the eyes of the experimenter. If performance achievement is due to chance as emphasized in the instructions of this experiment, the failure subjects should not perceive their poor performance as a blow to their self-image and consequently they may be not experience a need to restore their image. This, we believe, is the most likely outcome. Thus, overall, no difference at all is expected between any of the three treatments since all subjects should attribute their performance to chance rather than skill.

Ten first year male undergraduates randomly selected from the university directory were run in each treatment, for a total sample of thirty subjects.

Manipulation check

Although performance is emphasized as luck related in the instructions, the subjects in the different groups were made to achieve widely different scores, so substantial differences are expected on the question concerning how well the subjects thought they did on the motor task. These data are summarized in table XIII.

 Insert Table XIII about here

As this table shows and as revealed by t tests, the success subjects thought they did significantly better than both the failure ($t_{16} = 5.574$, $P < .005$, one-tailed) and the control ($t_{16} = 1.946$, $P < .05$, one-tailed) subjects. The controls also thought they did significantly better than the failure subjects ($t_{16} = 4.438$, $P < .005$, one-tailed). Thus our manipulations were successful.

Results

Results of Kruskal-Wallis one-way analyses of variance on five indices of helping behaviour are presented in table XIV.

 Insert Table XIV about here

As this table shows, none of the contrasts between groups approached a significant level of confidence. Thus, on the average, all subjects regardless of their treatment

Table XIII

Manipulations check

Experiment VIII

TREATMENTS	SUCCESS	CONTROL	FAILURE
MEANS	5.88	5.22	3.44
STANDARD DEVIATION	0.78	0.66	1.01
N ¹	9	9	9

1... Some subjects did not return the questionnaire.

Table XIV

Kruskal-Wallis Anova (df = 2)

Experiment VIII

INDICES OF HELPING					
	SORTING TASK		VOLUNTEERING TASK		
	time	# sheets	# expts	#hours	ratio: \$/hour
H_c^1	0.62	0.93	0.36	0.35	2.5
P	N.S.	N.S.	N.S.	N.S.	N.S.

1... All H tests are corrected for tied ranks.

helped about equally on all dependent measures.

Thus, when success, failure and intermediate performance on the motor task are attributed to chance rather than skill, all differences in subsequent helping behaviour toward a person who knows of their performance and of its lucky nature disappear. The perception of the motor task as one requiring skill appears to have been another important factor in accounting for the previous results.

In conclusion, these results indicate that not any kind of failure will make subjects help an experimenter who knows of their failure more than control or success subjects. A failure that is apparently due to chance does not produce the effect.

With these data, we now have a clearer picture of the conditions under which the effects mentioned throughout this thesis should and should not be expected.

Overall summary of this chapter

At the beginning of this chapter, the psychological rationale and evidence suggesting the experiments discussed here were presented. All experiments included in this chapter used male exclusively and the independent variables were mainly implemented through differential performance scores on the motor task.

In experiment V, it was found that, when the person in need of help was a different person who did not know of

the subject's prior performance on the motor task, the success subjects helped more than the controls who, in turn, helped more than the failure subjects. These findings replicated those reported by Isen (1970) under similar conditions but are opposite in direction to those obtained in our previous studies when the person in need was the same throughout the experiment and therefore knew of the subject's prior performance on the motor task. Thus whether the person in need of help is the same and knows of the subject's prior performance or is a different person who is unaware of the subject's performance appears to be a critical factor in this situation.

Experiment VII confirmed the importance of this factor in an improved factorial design. All variables in this study were held constant across all treatments except that half of the subjects in each group were asked to help the same person who knew of their prior performance and the other half of the subjects were asked to help a different person who did not know of it. The results demonstrated that when the person requesting help was the same and therefore knew of the subject's prior performance, the failure subjects generally helped more than the success subjects; however, when the person requesting help was a different person who did not know of the subject's prior performance, the success subjects helped more than the controls who

helped, in turn, more than the failure subjects. These results were obtained with only five subjects per treatments. However, a more powerful manipulation of success and failure than in previous studies was used in this experiment since experiment VI had shown that more clear-cut results could be obtained with this manipulation. The results of experiment VI replicated once more the findings that failure subjects helped a person who knew of their performance significantly more than both control and success subjects, and that the control also helped such a person significantly more than the success subjects. The significance levels reached in this experiment improved substantially due to the use of the more powerful manipulation of success and failure.

For the first time in this programme of research the control subjects of experiment VI did not complete a third personality questionnaire but rather performed the motor task as did the other subjects and were made to achieve their performance prediction exactly. With this new control group the alternative explanation that prior results may have been caused by differential amounts of social interaction with the experimenter was eliminated. A second control group was also included in experiment VI in order to more accurately control possible individual interpretations of an intermediate performance on the motor task. Subjects in this control group could not see the motor scale as they performed and were

told they achieved an "average" performance. These subjects behaved similarly to those in the first control group, except that they volunteered for more experiments than subjects in any other of the treatments. A greater arousal of "curiosity" was suggested to explain this finding.

It should be mentioned here that similar results have since been reported by Isen, Horn and Rosenhan (1973), even though they used children in their experiment. Thus the results seem to have a great deal of generality since they have been obtained with both children and adults (students) and with both a marble game and a motor task.

Finally when instructions emphasized that performance on the task was due to chance, none of the differences between treatments in terms of helping behaviour toward the same experimenter reached significance. It should be noted that in this experiment (VIII) ten subjects were run per treatment and the most powerful manipulation of success and failure was employed. These conditions were optimum to demonstrate differential effects, but none nevertheless were evidenced. Thus our previous findings that failure subjects helped a person who knew of their prior performance more than control and success subjects holds only when the task is perceived as one requiring skill, not when the task is perceived as based on chance.

In all studies discussed so far in this dissertation,

our findings are limited by the motor task used throughout to induce experiences of success and failure. Attempts to correct this deficiency will be reported in the next chapter. More naturalistic dependent measures of helping behaviour will also be obtained. This will either limit or add generality to the findings.

Chapter VIII

Replications using different manipulations of success and failure and a different measure of helping behaviour.

Introduction

So far in this research programme a rather unique motor task has been consistently used to manipulate experiences of success and failure. Although different definitions of success and failure have been implemented with this machine and similar overall results have been obtained, the constant use of the same apparatus throughout our studies limits the generality of the findings. As Mills (1969) points out:

"...the best strategy to use in replicating the result is to change the procedure of the original study as much as possible. Thus one might use a different manipulation of the independent variable in a new situation with different subjects, a different cover story and a different measure of the dependent variable. To show that the same relationship is found even though many details of the procedure are changed is much more convincing support of the hypothesis than simply repeating the identical procedure and finding the same result (p.429)."

This strategy was gradually implemented as described in the experiments which follow.

Another possible criticism of the prior studies in this series is that the same experimenter has been used almost exclusively. This may be a problem since "experimenter

bias", that is, the unintentional influence of the experimenter's behaviour on the results, may have been operating.

Indeed, recent studies (Rosenthal and Fode, 1963; Rosenthal, 1966; Rosenthal and Jacobson, 1968;) have suggested that the experimenter may unintentionally deviate from the instructions in some subtle ways, depending upon the condition the subject is in, to produce results he wants to obtain or expects to obtain. There has been a trend in social psychological experimentation in recent years to try to avoid experimenter bias by doing away with the human experimenter and having the experimental instructions produced by mechanical means.

Unfortunately these mechanical procedures tend to decrease experimental realism. Aronson and Carlsmith (1968) discuss ways of avoiding experimenter bias without eliminating the experimenter. These involve procedures that keep the experimenter unaware of the conditions to which the subjects are assigned. Whenever possible, this has been implemented in previous experiments. Unfortunately it could be done only when two experimenters were involved.

Another means of determining if experimenter bias has contributed to the results is to use a naive experimenter and lead him to expect to find results opposite to those obtained previously. If, in this manner, similar results are found, then experimenter bias can safely be ruled out as alternative explanation. To our knowledge this procedure

has never previously been reported in the psychological literature.

Finally, it is frequently claimed that experiments, particularly laboratory experiments, are artificial. This is certainly true in one sense of the term artificial. As Mills (1969) points out:

"By definition, experiments are artificial in the sense of being man-made ... To say that experiments are artificial in the sense of being man-made is not in any way a criticism. It is simply a description of their essential nature (p.421)."

However, there is a second sense that definitively would be a criticism if it applied to an experiment.

"If an experiment is artificial in the sense that what occurred in the experimental situation is irrelevant to what might occur outside the experimental situation, the experiment is of no value (Mills, 1969, p.421)."

However, as Mills (1969) points out:

"Experiments are not intended to duplicate what would occur in ordinary life, but a good experiment helps us to understand what occurs in ordinary, everyday situations (p.422)."

In our previous studies, we deliberately created experimental conditions so that these would allow us to investigate the hypothesis in a way that would rarely be possible in the ordinary course of events. By manipulating the independent variable we were better able to test the hypothesis about a causal relationship than would have been the case if we did not intervene in the normal course of

events. The major value of experiments is that they are better able to test hypotheses about causal relationships than non-experimental studies. As Seltiz et al point out:

"When an experiment is possible, it is the most effective method of testing a hypothesis that one variable, X, causally influences another variable, Y. (1959, p.90)."

This experimental method will continue to be used in subsequent studies but more naturalistic manipulations of success and failure as well as more frequently used measure of helping behaviour will be employed. For instance, in the final study reported here, actual success and failure on an exam is used as the independent variable. This experiment should permit us to determine whether or not the foregoing findings are artificial, in the sense that they are irrelevant to real-life conditions. Since random assignment of subject to treatments was not possible for ethical reasons, this study, although it could not by itself establish a causal relationship between success and altruism, would nevertheless resemble naturalistic conditions more closely and by the same token, it would indicate if random assignment to conditions is necessary to obtain the previous findings.

Experiment IX

This experiment was conducted by a student¹ enrolled in the honours psychology programme at McMaster University

¹...We wish to express our thanks to David Scoon for conducting this experiment.

as a partial requirement of an advanced course in experimental social psychology.

The student wished to study the effects of feeling adequate versus inadequate on subsequent helping behaviour. He was asked what he thought the outcome of this study would be and he predicted that those made to feel adequate would likely help more than those made to feel inadequate. When asked the basis for this prediction, the student was unable to support it.

He was then told that this was a sound idea and that on the basis of prior research in this area, it seemed that his prediction was accurate. The Berkowitz and Connor's (1966) and the Isen's (1970) articles were recommended to him as readings in the area. It will be recalled that these two articles both reported that success subjects helped more than failure subjects. These reading, of course, further reinforced the student's belief in the accuracy of his prediction, the opposite of what would be predicted on the basis of the earlier work in this dissertation research.

Procedure

Subjects were assigned to a condition where they would presumably be induced to feel inadequate (failure) or to a condition which presumably made them feel adequate (success). Feelings of adequacy were brought about by having subjects take arithmetic and verbal tests which, the subjects

were told, were good indicators of mental ability. However, for the inadequate group, the tests were much more difficult than for the other adequate, or success, group.

The arithmetic test (Horner, 1968;) was administered after the subjects had read and understood a standard set of instructions (see appendix I, section N) and consisted of twenty-five simple problems (see appendix I, section O). The subjects were asked to work across the page as quickly as they could.

The verbal test consisted of a list of ten very difficult anagrams (appendix I, section R), or a list of twenty easy anagrams (appendix I, section Q), of which the subject was to solve any ten. The anagrams were conducted from the Thorndike-Lorge word list (Mayzer and Tresselt, 1958). The difficult list contained words either infrequent (occurring at least once per million but not as often as twice per million) or very infrequent (occurring less than once per million but no more than once per four million). The easy list consisted of words used very frequently (100 times or over per million) or frequently (at least 50 times per million but not as often as 100 times per million).

Subjects in the inadequate or failure condition were given three minutes to complete the twenty-five arithmetic problems. They were also given three minutes to solve the list of difficult anagrams.

A pre-test had indicated that it was very unlikely that any subject could possibly finish either test in three minutes. However, the subjects were told that most people were able to complete each test within this time. It was felt that these instructions in conjunction with the subject's seemingly poor performance would induce feelings of inadequacy or failure.

Subjects assigned to the adequate or success group completed the same arithmetic test but were given seven minutes to complete it, which was said to be the average length of time needed by most people. The verbal test also consisted of anagrams but these were much easier and could usually be solved in the allotted three minutes which they were told was the length of time required by most people. These subjects, it was thought would feel more adequate or successful since they should be able to do quite well on both tests.

Once the two tests had been completed, the experimenter computed the number of correct responses and made an appropriate comment, emphasizing whether the subject had done above or below the mean performance of which the subject had previously been informed.

At this point, the experimenter, using the same subterfuge as in previously reported studies, asked the subject if he could help him out by sorting sheets for him.

The time spent sorting sheets for the experimenter was recorded for each subject and constituted the only dependent measure taken in this study. When a subject indicated that he had to leave or when thirty minutes of work on the sorting task had been completed, the experimenter thanked the subject and indicated that the amount of sheets sorted was certainly enough. The subject was then thoroughly debriefed concerning the true nature of this experiment.

The subjects were twenty male college students selected at random from the student's directory and asked to participate in an experiment in psychology. They were randomly assigned to one of the two treatments. They were not paid for their participation and they were all run individually in a different and smaller room than those used in previous experiments. The experimenter was the same person (a male) throughout the study. Therefore he knew of the subject's performance on the "mental ability" tests.

Results

Results obtained in this study are presented in figure 14.

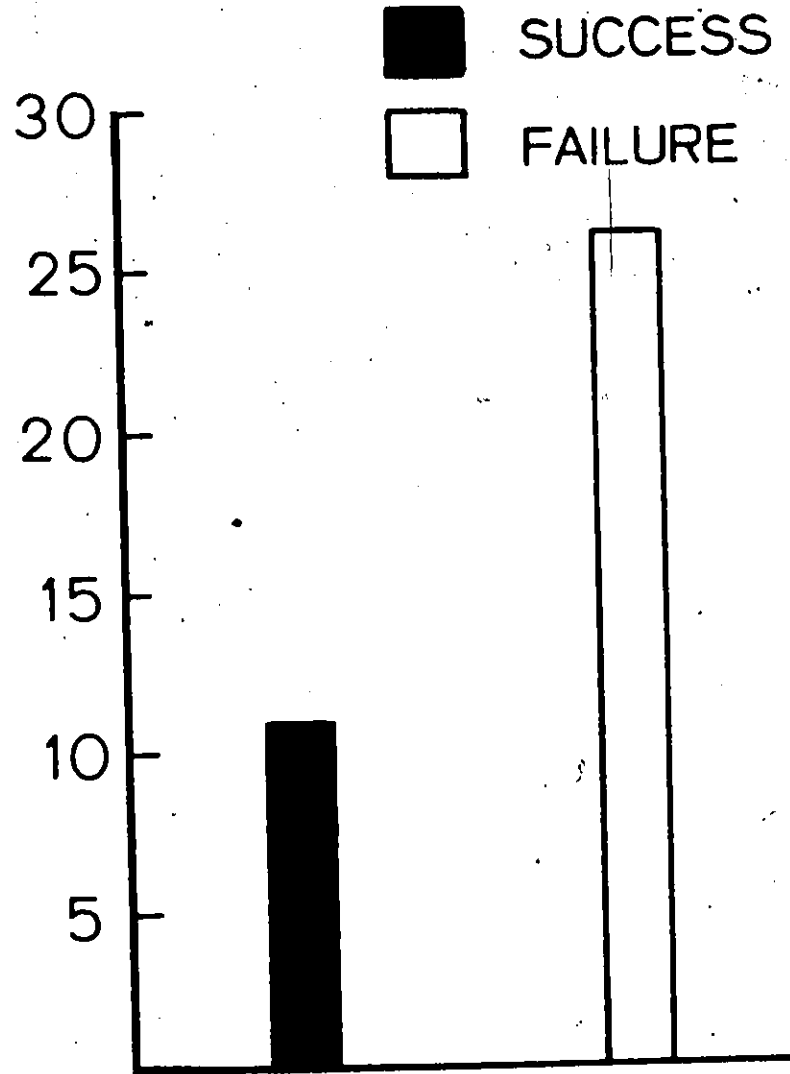
Insert figure 14 about here

As this figure shows and as revealed by Mann-Whitney U test, the failure or inadequate subjects ($\bar{X} = 24.9$, S.D. = 4.7) helped the experimenter for significantly longer periods of

FIGURE 14

EXPERIMENT IX

MEAN HELPING TIME IN MINUTES.



time than the success or adequate subjects ($\bar{X} = 10.3$, S.D. = 5.03) ($U = 3$, $P < .001$, one-tailed).

These results replicated previously obtained findings with the use of the same dependent measure of helping behaviour even though a different manipulation of success and failure had been used and despite the fact that the experimenter expected to find the opposite results. Thus these findings are generalizable, that is, they are not limited to the motor task performances nor to first year undergraduate male students and it appears that these findings have not been biased by the experimenter in prior studies.

However, many methodological flaws exist in this experiment which suggest caution in accepting the conclusions. For instance, there was no control condition which makes it impossible to assess whether the treatments increased or decreased helping behaviour relative to a baseline level. Furthermore, the subjects in the two groups did not perform the same anagram test and they were given different lengths of time to complete the arithmetic test. Any of these differences beside success and failure on the tests may have caused or contributed to the effects reported.

Finally, the study was concerned only with the relationship between success and helping behaviour toward a person who knew of the subject's prior performance on the

f

tests. The relationship between the two variables when the person in need of help did not know of the subject's performance was not observed. The next experiment was conducted in order to correct these methodological flaws.

Experiment X

The main purpose of this study was to determine if similar effects could be obtained with a totally different dependent measure of helping behaviour. We also wanted to observe within a single experiment, the relationship between success and failure and helping behaviour toward both a person who knew of the subject's prior performance (same experimenter) and a person who did not know of it (different experimenter).

Procedure

A similar manipulation of success and failure as used in experiment IX was employed here except that a series of three substitution tests (shown in appendix I, section K, L, M,) was administered prior to the arithmetic test and in addition both anagram tests were completed by all subjects.

The general instructions (appendix I, section I) emphasized that this battery of tests was designed to measure general intelligence and had proven to be quite successful in predicting academic performance and ability to adjust

quickly and efficiently to new situations. The subjects were also told that this battery had been recently shown by psychologists to be an excellent measure of "career success" in science as well as in arts and in business. The whole battery of tests with appropriate instructions can be seen in appendix I, section I to R inclusively. This battery was administered to subjects in group sessions varying in size from six to eleven subjects. The battery took about thirty minutes to complete.

In this experiment, all subjects were given one minute to complete each of the three substitution tests, ninety seconds to complete the arithmetic test, two minutes to complete the easy anagram test and finally five minutes to do the difficult anagram test. A thirty seconds rest period was allotted between each test.

At the beginning of the testing session, the experimenter scheduled all subjects for an individual meeting with him at which time, they were told, they would be given their results on each test as well as receiving \$1.00 for their participation. At this second session, usually the next day, the subject was first paid in the following manner: two quarters, three dimes and four nickels. The experimenter thanked the subjects for his participation. The experimenter then presented the subject with a sheet on which his results on each test were summarized (shown in appendix I, section S).

In the second column on this sheet the correct number of responses obtained on each test was indicated but the norms shown in the first column varied depending upon the treatments. Subjects that had been randomly assigned to the success group were made to believe they had five more correct responses than the norm on each substitution test, one more correct response than the norm on the arithmetic test and two more correct responses than the norm on each of the two anagram tests. Failure subjects, on the other hand, were led to believe they achieved five correct responses less than the norm on each substitution test, one correct response less than the norm on the arithmetic test and two correct responses less than the norm on each of the two anagram tests.

A control group was included in which subjects were led to believe they had achieved the norm almost exactly on each of the tests.

After the results had been given to the subjects, the experimenter made a general statement indicating whether the subject was above, below or equal to the college norms in his overall performance. A few appropriate statements were also made to the subject emphasizing whether or not he should experience difficulty as an undergraduate student as indicated by his results on the battery of tests. The subject was then asked not to discuss this experiment with anyone and was dismissed.

Immediately after the subject had left the laboratory and while he was walking down the corridor toward the exit, he was asked either by the same experimenter or by a new person ¹ (also a male), to give money to the "poor children of Hamilton". The request was as follows:

"Excuse me, I volunteered to collect money for the Poor Children of Hamilton. Would you care to give something? "

An official looking box with a change slot, containing a fixed amount of change, was presented to the subject as the request was made. The exact amount of money donated was recorded for each subject.

Once the subject had made his contribution or had indicated he had no change or was not interested, he was stopped once more and asked to come back to the laboratory for a few minutes. All subjects accepted.

During this final session, all subjects were extensively debriefed as to the true nature of the experiment and were told that the norms mentioned was false. All subjects were also given their donation back or were told they would have received it back if they had contributed. All questions of the subjects were answered in detail.

A brief summary of previous studies reported in this dissertation was also communicated to the subject. The debriefing period took an average of twenty minutes.

1...I wish to express my thanks to Chester Fedoruk for his assistance.

At the end of the debriefing period, the experimenter (the same experimenter who conducted the testing and feedback sessions) told the subject he was in reality collecting money for UNICEF and if he really wanted to give, he would be glad to send it to UNICEF for him. It was clearly emphasized that there was no obligation on his part to contribute. The amount of money donated upon the second request also was recorded for each subject.

Finally, the subject was urged not to discuss this experiment with anyone since it could bias the results. The subject was invited to come back to the laboratory in about a month if he wanted to know the results of this particular study.

All subjects expressed a great deal of interest in the study and agreed with the experimenter that the manipulations of success, failure and control were necessary. Most subjects spontaneously expressed that they were glad to have participated in this experiment and some volunteered for other experiments. The subjects were thirty first year male undergraduates randomly selected from the university directory.

The design was a 2 (same versus different experimenter) x 3 (treatments) factorial.

Results.

The result of a Kruskal-Wallis one-way analysis of

variance computed on the amount of money donated when first requested indicated that there were differences between treatments ($H_0 = 9.61$, $df = 5$, $P < .1$, two-tailed). The data are presented in figure 15.

Insert figure 15 about here

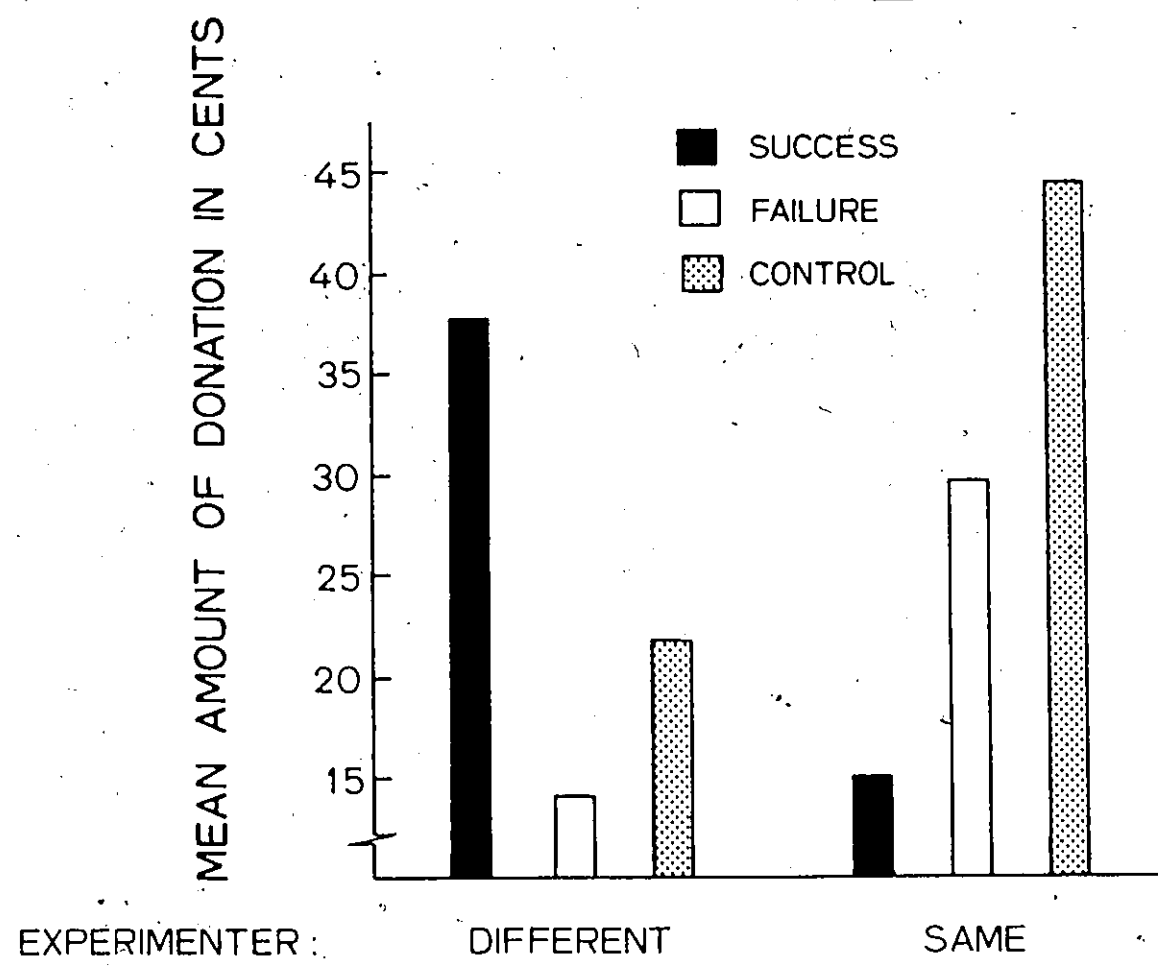
As this figure and the Kruskal-Wallis test indicate, the groups tended to differ in the amount of their donations. Since only five subjects were included in each group, Mann-Whitney U tests, were computed between groups even though the overall level of confidence did not reach the .05 level.

These tests indicated that when the person requesting the donation was a different person who therefore did not know of the subject's prior performance on the battery of tests the success subjects ($\bar{X} = 38$, $S.D. = 35.4$) tended to give more money to the worthy cause than the failure subjects ($\bar{X} = 14$, $S.D. = 10.2$) ($U = 4.5$, $P < .06$, one-tailed). There were no differences approaching significance between the control ($\bar{X} = 22$, $S.D. = 6.7$) and the success groups. However, the general trend is similar to those reported in previous studies, that is, the success subjects gave the most, followed by the controls, and the failure subjects gave the least.

On the other hand, when the person requesting the donation was the same experimenter who therefore knew of the

FIGURE 15

EXPERIMENT X



subject's prior performance on the battery of tests, then it was found that the failure subjects ($\bar{X} = 30$, S.D. = 11.1) gave significantly more money than the success subjects ($\bar{X} = 15$, S.D. = 12.9) ($U = 4$, $P = .048$, one-tailed), and the control subjects ($\bar{X} = 45$, S.D. = 32.5) were also found to give significantly more money than the success subjects ($U = 3$, $P = .028$, one-tailed). There were no significant differences between the control and the failure subjects.

When comparisons were computed between groups under the same treatment, it was found that success subjects tended to give more money when requested by a different person who did not know their results than when requested by the same person who knew them ($U = 5$, $P = .075$, one-tailed). Failure subjects, on the other hand, were found to give significantly more when requested by the same person who knew their results than when requested by a different person who therefore did not know them ($U = 4$, $P = .048$, one-tailed). No significant differences were found between the two control groups ($U = 6$, N.S.).

Thus overall, these findings replicated those obtained previously, even though a completely new dependent measure of helping behaviour, money donation, was used, and a new procedure had been employed. Therefore, despite multiple changes in the procedure such as group rather than individual testing sessions, delay rather than immediate feedback, long I.Q. testing rather than shorter I.Q. (experiment IX),

I.Q. tests rather than motor task, the same pattern of results as reported in prior experiments was found.

The amount of money donated upon the second request is not reported here since a Kruskal-Wallis one-way analysis of variance indicated that there were no significant differences between groups on these data ($H = 1.35$, $df = 5$, N.S., two-tailed).

Since these above findings are reliable and replicable despite multiple procedural changes and generalizable, a final question seems appropriate at this stage of the research programme: can the same data trends be demonstrated with the use of naturalistic successes and failures? This is the subject of interest in the following and final experiment.

Experiment XI

As Brunswik (1952) has so eloquently argued, if we want to generalize how well an organism actually attains its instrumental goals, and this he felt was the true aim of a proper psychology, we must study the organism in its natural ecology. As pointed out by Hammond (1966):

"If one is not to be arbitrary about the choice of range and distribution characteristics of the stimulus variables of an experiment, what criteria should be employed? Brunswik's answer was always to the effect that the choice should be such that the experimental environment is made representative

of the animal's natural habitat (p.61)."

Brunswik was among the first to emphasize the "stubborn" refusal of psychological findings to yield to generalization over conditions. He knew why generalization was failing, and set forth the methodological principles of representative design for remedying matters-principles based firmly on the fact that if statistical logic was the basis for inductive generalization over subjects, the same logic had to be the basis for induction over situations.

The preceding experiments have convincingly demonstrated that relationships between variables can be replicated over a variety of situations. Even though, as our programme of research progressed the situations sampled were closer to real-life conditions, we always artificially created the manipulation of interest. Success and failure are, however, everyday events in the real world and, as Brunswik noted, the study of this situation appears an essential step in order to be able to conclude that the relationships reported are representative. The following experiment was conducted with Brunswik's thoughts in mind.

Procedure

As our manipulations of success and failure, the real scores obtained by students on an exam in a second year course in social psychology were used in this experiment. Thus all subjects were second rather than first year students

as was the case in most of the previous studies.

Immediately prior to the exam all students were asked to write their telephone number as well as to predict their score on the exam. This was done since we wanted to include in this study subjects who achieved higher, lower, as well as a score about equal to what they predicted. This definition of success, failure and control would be conceptually similar to those used in previous studies. However, this proved impossible to carry out in practice since virtually all students overestimated their score in their prediction.

Due to this outcome and since we did not want to falsify scores obtained on the exam for ethical reasons, other means of grouping subjects had to be devised quickly, since the results of the exam were to be made public a week after its completion.

It was decided to select for this study only those students who had listed their telephone number and whose score was not equal to the class mean. A control group could not be included since there were too few students whose had listed their telephone number and also scored about equal (29, 30 and 31 out of 50) to the class mean. The class mean on this particular exam was sixty per cent. With these criteria of selection, fifty-two male students could be used.

These students were phoned and asked to participate in an interview about the social psychology course. They

were told their participation could help improve the quality of the teaching in the course. If a student accepted, an individual meeting was scheduled and he was told that he could get his exam result at the end of the interview.

Once the subject arrived at the laboratory he was given an interview sheet to complete in writing. Questions concerned the class, its size, the quality of teaching and the instructors and the tutorial leaders, the content of the course and so on. The experimenter then asked the subject a few questions to be answered verbally. These questions were mainly designed to obtain the student's own suggestions in order to improve the course. The experimenter wrote down in brief all comments made by the students.

The student was then thanked for his cooperation and told that his comments would be discussed with all people involved in the teaching of this course and that hopefully, as a result of these interviews, the course would improve. Finally, the experimenter told the student that the only way he would thank him for his cooperation, was to give him, prior to any other students, the results obtained on his exam. Along with the student's score on the exam, the experimenter made an appropriate statement indicating whether the score was above (success) or below (failure) the class mean. The student was then dismissed.

It was not until this stage of the procedure that the

dependent measure of helping behaviour was obtained. As in the previous study, approximately half of the subjects, randomly selected, in each group were asked either by the same experimenter or by another person¹ (also a male) to donate money for the poor children of Hamilton. The request was identical to that of the previous experiment and the same official looking box was used. After the subject's response to the request, he was thanked. No debriefing was held afterwards since the students had received accurate information concerning their exam and no unusual pressures were made when requested to give money.

The students were not paid for their participation in this study.

The money collected in this study as well as in the prior study (\$25.00) was sent to UNICEF.

Since the interviewer was a male, only male students were selected to participate in this experiment. A total of thirty five subjects were interviewed before the publication of the class results on the exam.

The design of this study is a 2 (success versus failure) x 2 (same versus different experimenter) factorial.

Results

Results of a Kruskal-Wallis one-way analysis of variance computed on the amount of money donated revealed

1...I wish to express my thanks to Chester Fedoruk for his assistance.

that there were significant differences between conditions ($H_0 = 10.49$, $df = 3$, $P < .02$, two-tailed). The data obtained for each group are presented in figure 16.

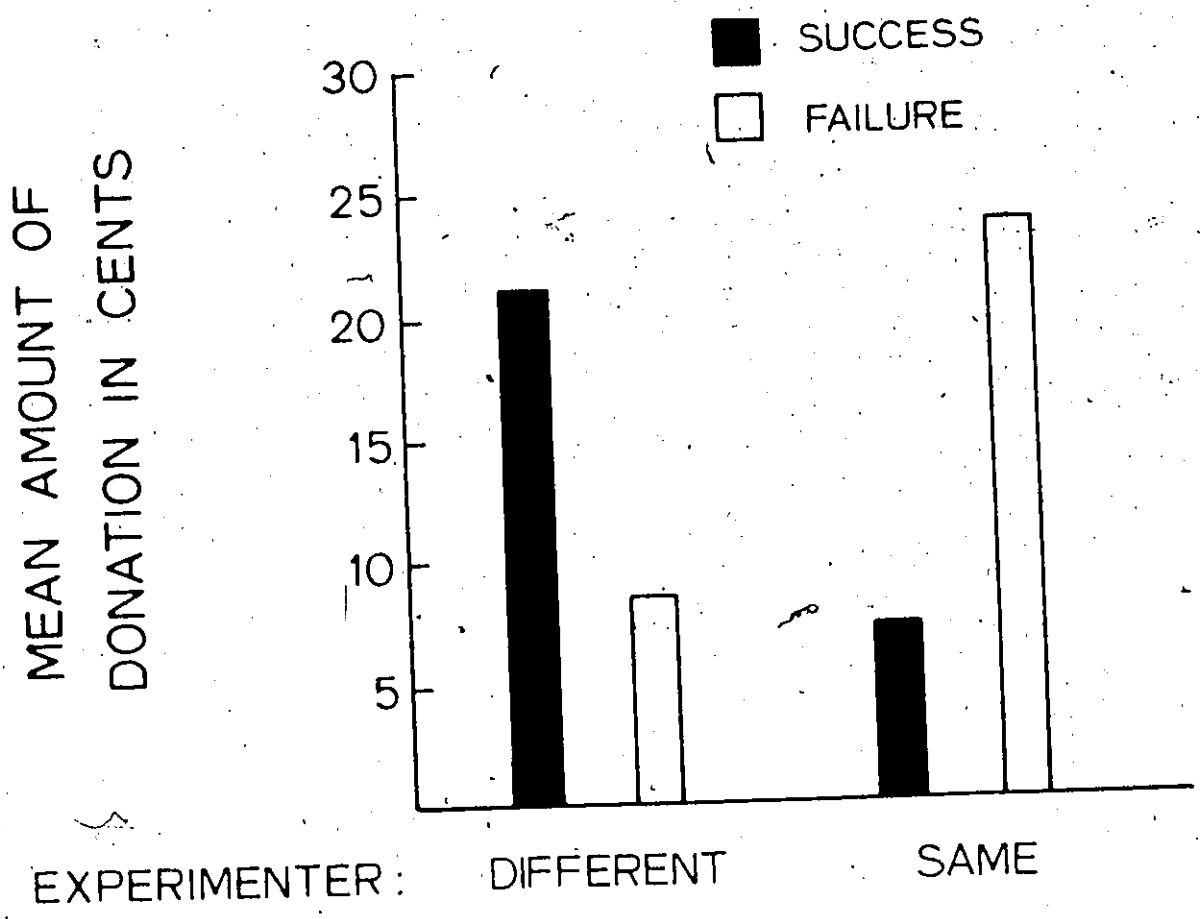
 Insert figure 16 about here

Mann-Whitney U tests computed between groups indicated that when the person requesting the donation was the same person who conducted the interview and therefore knew of the subject's score on the exam, the failure subjects ($\bar{X} = 24.1$, $S.D. = 14.5$) donated significantly more money to the poor children of Hamilton than did the success subjects ($\bar{X} = 7.25$, $S.D. = 10.9$) ($U = 13$, $P < .01$, one-tailed). However, when the request was made by another person who did not know of the subject's score on the exam, the reverse was found. The success subjects ($\bar{X} = 21.25$, $S.D. = 12.2$) gave significantly more to the poor children of Hamilton than the failure subjects ($\bar{X} = 8.66$, $S.D. = 9.73$) ($U = 14.5$, $P < .025$, one-tailed).

Finally, when contrasts were computed between groups under the same condition, it was again found that success subjects gave significantly more to a different person who therefore did not know of their exam result than to the same person who knew it ($U = 13.5$, $P = .03$, one-tailed). The failure subjects, on the other hand, gave significantly more to the same person who therefore knew of their exam score than to a different person who did not know it ($U = 16.5$,

FIGURE 16

EXPERIMENT XI



P < .025, one-tailed).

These results replicated those obtained in previous studies even though random assignment to conditions could not be used here and despite the use of real scores obtained on an exam.

Since this study employed a somewhat different population (second year students), a new definition of success and failure, and a measure of helping behaviour often encountered in the real world, the results obtained extend the generality of the previous findings considerably.

Summary

Three studies have been reported in this chapter. Even though the procedure used in previous experiments was substantially changed from one study to the next, the manipulations of success and failure had been varied widely, a different dependent measure of helping behaviour had been used in two of these studies, similar overall data trends were obtained.

In experiment IX, a short I.Q. test was administered individually to subjects randomly selected from the student's directory. Half of them, randomly selected, were led to believe they achieved higher performances than the college student's norm and the other half were made to believe they achieved lower performances than the college student's norm. Subjects were then requested to help the experimenter with

the sorting sheets task. It was found that failure subjects helped the experimenter more than success subjects. This finding was obtained despite the fact that the experimenter expected to obtain the opposite results. Thus experimenter bias was eliminated as an alternative explanation of these and previous results.

In experiment X, a longer I.Q. battery of tests was administered to groups varying in size, from six to eleven subjects. Subjects were all scheduled for an individual meeting with the experimenter, a meeting in which the subjects received feedback on their performances on the battery of tests as well as \$1.00 in change for their participation in the study. Subjects were randomly assigned to success, failure or control conditions. They were made to believe they achieved either consistently higher, lower or equal to the general college student's norm on each test. A few seconds after the subject had departed from the laboratory, he was requested either by the same experimenter or by someone else to donate money to a worthy cause.

The results showed once again that when the person requesting help was the same and therefore knew of the subject's prior results on the battery of tests, failure subjects donated significantly more than success subjects. However, when the person requesting help was a different person and therefore did not know of the subject's prior

performance on the tests, success subjects contributed significantly more money to the worthy cause than did failure subjects.

In experiment XI, for the first time in this programme of research, the subjects were not randomly assigned to experimental treatments but rather were assigned to conditions according to their actual score obtained on a real exam.

Subjects were all second year male undergraduates enrolled in a social psychology course. The exam was a regular one which counted toward the final grade in the course. Thirty five subjects were interviewed. Sixteen of them had succeeded on the exam, that is achieved scores above the actual class mean, and nineteen had failed, that is achieved scores below the class mean.

All subjects thought the interview was mainly designed to elicit their opinions concerning different aspects of the course. At the end of the interview, subjects were told their score of the exam and then dismissed. Subjects in this study were not paid for their participation.

On their way toward the exit, subjects were requested as in the previous study, to donate money to a worthy cause.

The results of this study once more showed that when the person requesting donation was the same and therefore knew of the subject's prior performance on the exam, failure subjects then contributed significantly more than success

subjects, but when that person was different and therefore did not know of the subject's performance on the exam, those who had succeeded donated significantly more money to the worthy cause than those who had failed the exam.

These three replications of the data trends add considerable generality to the previous findings.

In the next chapter, the results of this programme of research as a whole will be summarized briefly. A few graphs representing the outcomes of a number of the experiments grouped together will be presented since it is felt that an easier grasp of the implications of these findings will be obtained in this manner. Interpretations of the data will also be discussed and few additional experiments will finally be suggested.

Chapter IX

Overall summary and general discussion.

In this final chapter, the major findings of the present programme will be reviewed. A series of graphs based on the grouped results of the experiments will contrast the different findings and should clarify the underlying logical progression of this dissertation as well as the conclusions these findings suggest. However, it should be noted that these conclusions will be reached via comparisons between experiments and will therefore be confounded. Interpretations of the data as well as supporting and refuting empirical evidence will also be summarized. Finally, additional research will be suggested.

Overall summary, Interpretations and Conclusions

Five "figures" will be presented in this section. The data included in each figure will be described and the conclusions that can be reached from these data will be outlined. The order of presentation used here closely matches the actual progression of this programme of research as well as the order in which it was dealt with in the previous chapters. The dependent measure reported in these figures sometimes varies but usually it is the one with which the most

consistent results were obtained throughout this research effort.

Let us first consider the data obtained in the first three experiments. These data are summarized in part in figure 17.

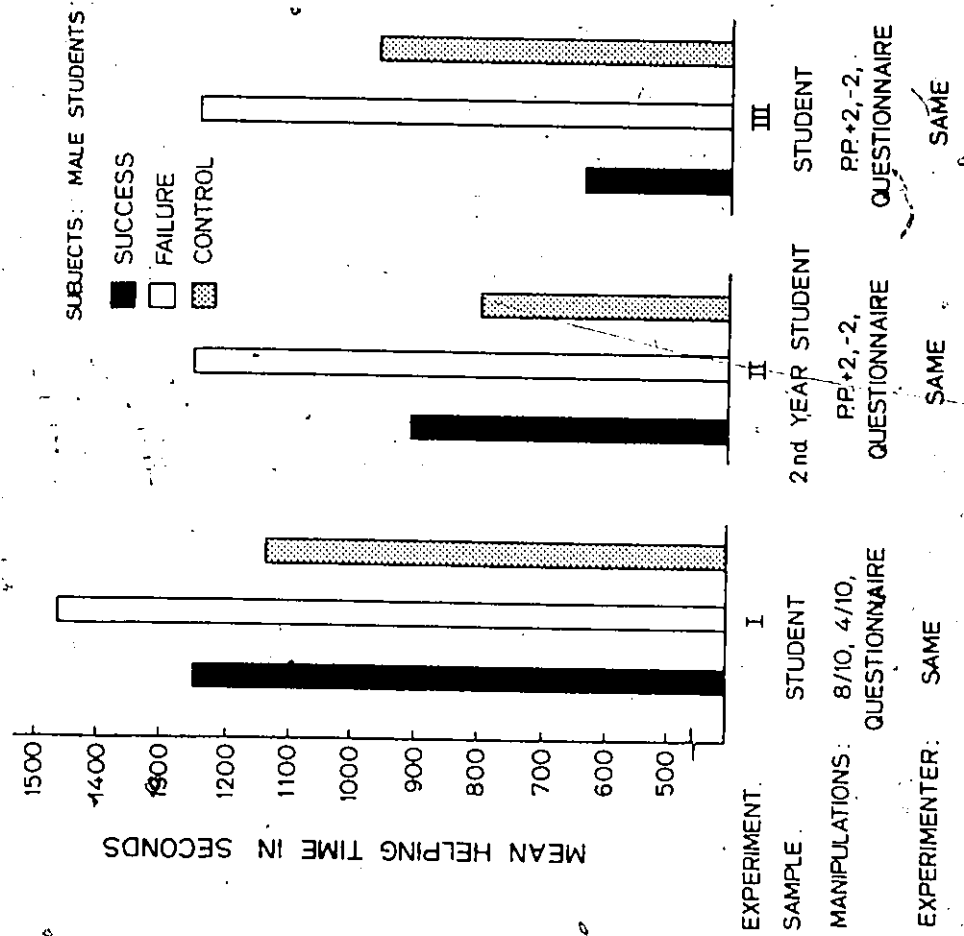
Insert figure 17 about here

With this figure, comparisons of the results obtained in the first three studies can easily be made. It will be recalled that the experimenter was the same person throughout these studies. Therefore he was aware of the subject's prior performance. In all three experiments, the same motor task was also consistently used to manipulate success and failure. However, the number of practice trials, the number of success or failure trials and the amount of money paid to the subjects were different in study I than in studies II and III. In study I the experimental subjects were made to fail on only two practice trials and they were then made to either succeed on eight or fail on six trials out of the ten trials. Subjects in this experiment were not paid.

On the other hand, the experimental subjects in studies II and III were made to succeed on three of the five practice trials and they were made to achieve either two perfect trials more (success) or two less (failure) than they predicted after the practice trials. In these two studies

FIGURE 17

COMPARISON BETWEEN EXPERIMENTS



there were twenty instead of ten trials and the subjects were paid \$1.00 for their participation.

Furthermore, subjects in experiments I and III were randomly selected first year male undergraduates (the data obtained with female subjects in study III are not included in figure 17) but subjects in experiment II were randomly selected second year male undergraduates attending summer school.

However, in all three experiments, control subjects did not perform the motor task but instead answered a personality questionnaire which took on the average the same length of time to complete as the motor task. Finally, each treatment in each of the first two studies reported in figure 17 included ten subjects but for the third study each included fifteen subjects. The dependent measure throughout is the time spent sorting shots for the experimenter.

Because there are so many differences between these experiments, few meaningful contrasts of the data reported can appropriately be made. Nevertheless, if one dares to make comparisons, the tentative conclusions that can be reached from these results are:

- 1) As the manipulations of success and failure are changed from fixed to relative scores and in addition, as the number of practice trials and experimental trials are increased, larger differences in the means between groups are obtained.

This conclusion is reached by contrasting the results of study I with those of studies II and III.

A second conclusion follows from a contrast of the results of experiment II with those obtained in experiment III:

- 2) When the performance prediction plus or minus two perfect trials is used as the manipulation of success and failure, larger differences between groups are obtained with first year than with second year male students.

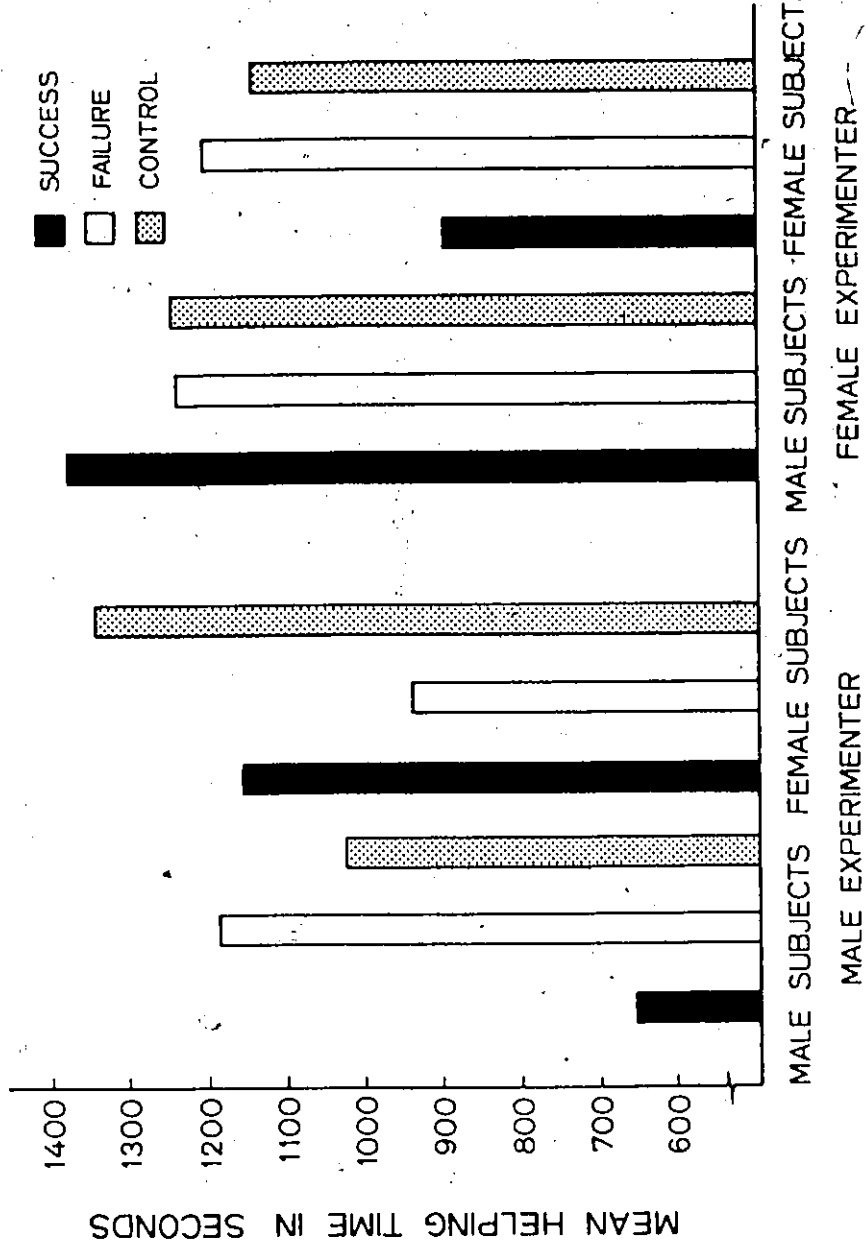
Since the results of the first two studies were non-significant and those of experiment III were marginal in some cases, it was decided to conduct an experiment similar to experiment III but to use female experimenters as well as both male and female subjects.

The data of this experiment as well as those obtained by the first sixty subjects of experiment III (male experimenter) are summarized in figure 18.

Insert figure 18 about here

The data reported in this figure were collected from randomly selected first year undergraduates. One male and two female experimenters were used. Since all the subjects in this experiment were run under identical conditions within each treatment, many meaningful comparisons could be made and

FIGURE 18
EXPERIMENTS III AND IV
SEX OF SUBJECTS x SEX OF EXPERIMENTERS



SAMPLE: STUDENT
MANIPULATIONS: P.P.+2, -2, QUESTIONNAIRE.
EXPERIMENTER: SAME

some important conclusions reached.

- 3) First, within the same sex dyads, (subject and experimenter are of the same sex), the same trend is found for both males and females: failure subjects helped more than success subjects, and the control subjects were intermediate between these two groups.
- 4) Given different sex dyads (subject and experimenter are of different sex), a partial reversal of the foregoing trend was found: success subjects helped more than failure subjects.
- 5) Finally, when comparisons were made within the same treatment, it was found that subjects helped an experimenter of a different sex more than they helped one of the same sex. This conclusion holds true in five out of six possible cases. The only exception is the failure male subjects who helped a male experimenter more than the failure female subjects.

The results of this study are important since they indicate that a reversal of the major finding appears when the experimenter is of a different sex than the subject. It will be recalled that Isen (1970) also used both male and female subjects but the confederate requesting help was always a female. The ratio of males and females used by

Isen (1970) either was not reported (first two studies) or was in favor of males (third study, ratio: 6: 4). This, in view of the results presented in figure 18 may be one reason why she found that success subjects helped more than failure subjects. In any case, the variables were confounded and an accurate conclusion, as indicated by the data presented here, could not be reached from her studies.

Furthermore, of all the directly relevant studies reviewed in chapter III of this report, few are adequate in this regard. Berkowitz and Connor (1966), Midlarsky (1968a), Aderman and Berkowitz (1970) and Isen and Levin (1972) used male subjects exclusively in their studies and Kazdin and Brian (1971), Rudestam, Richards and Garrison (1971), Moore, Underwood and Rosenhan (1973), Isen, Horn and Rosenhan (1973) and Rosenhan, Underwood and Moore (1974), although they all used both male and female subjects in their studies of helping behaviour, the experimenter or confederate requesting help was always a female. In another study by Underwood, Moore and Rosenhan (1973), the confederate was a male even though subjects were of both sexes.

Thus it appears that previous researchers may have come to the general conclusion that success subjects or subjects feeling "good" helped more than failure subjects or subjects feeling "bad" partly because they did not systematically vary either the sex of the subjects, or the sex of the

person in need of help or requesting help, or both of these.

At this point in the present research it was decided to increase the power of the manipulations of success and failure in order to find out if more reliable results could be obtained, while at the same time using fewer subjects per group. It will be recalled that significant results were obtained in experiment III but also that the N was fifteen subjects per treatment. Figure 19 presents the data obtained in three experiments related to the above question.

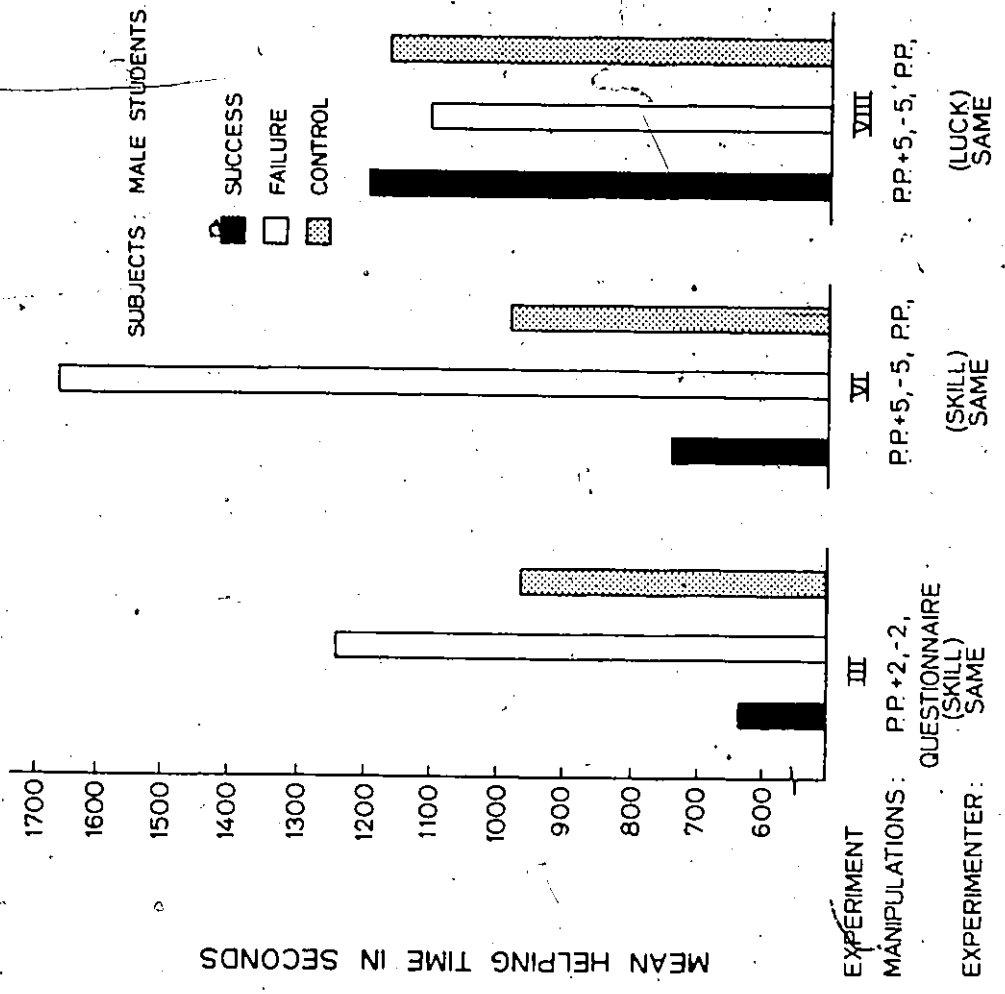
 Insert figure 19 about here

In this figure, comparisons of the results obtained in experiments III, VI and VIII can be made. In all these studies the manipulation of success and failure always is relative to the subject's performance prediction. However, in experiment III performance prediction plus or minus two perfect trials on the motor task was the definition of success and failure used. The control subjects in this study completed a personality questionnaire instead of performing the motor task.

In experiments VI and VIII, performance prediction plus or minus five perfect trials on the motor task was the definition of success and failure used. Control subjects in these two studies, however, performed the motor task but were made to achieve their performance prediction exactly. The only difference between studies VI and VIII is that

FIGURE 19

COMPARISON BETWEEN EXPERIMENTS



the task was described as based on skill in study VI but as a chance task in study VIII. All subjects in these three experiments were first year male undergraduates (figure 19 excludes the female subjects run in experiment III) randomly selected. Each subjects was paid \$1.00 for his participation. The experimenter in these studies was the same throughout and consequently he was aware of the subject's prior performance on the motor task. The dependent variable reported in figure 19 continues to be the time spent sorting sheets for the experimenter.

Three conclusions are clearly indicated by the data presented in figure 19.

- 6) First, when the manipulations of success and failure were made more powerful (experiment III versus experiment VI), the results obtained became more significant statistically, due partly to larger differences and partly to decreased variance, but these remained in the same general direction: failure subjects helped more than control subjects who, in turn, helped more than success subjects.
- 7) Secondly, although different procedures were used in the control groups of experiments III and VI, the pattern of these treatments were about the same.

This demonstrated that a differential amount of inter-

personal interaction with the experimenter did not substantially influence the subject's behaviour and it also eliminates this variable as an alternative explanation accounting for the previous results.

8) Finally, the comparison of the results obtained in experiments VI and VIII demonstrates that the effects obtained in previous studies (experiments III, and VI) do not hold when the motor task is described to the subject as a luck or a chance task. Failure subjects did not help the experimenter more than other subjects when the task presumably is one of chance, even though powerful manipulations of success and failure were used (experiment VIII).

This last conclusion obviously is consistent with the idea that failure subjects helped the experimenter more than other subjects because of a need to repair their image in the eyes of the experimenter.

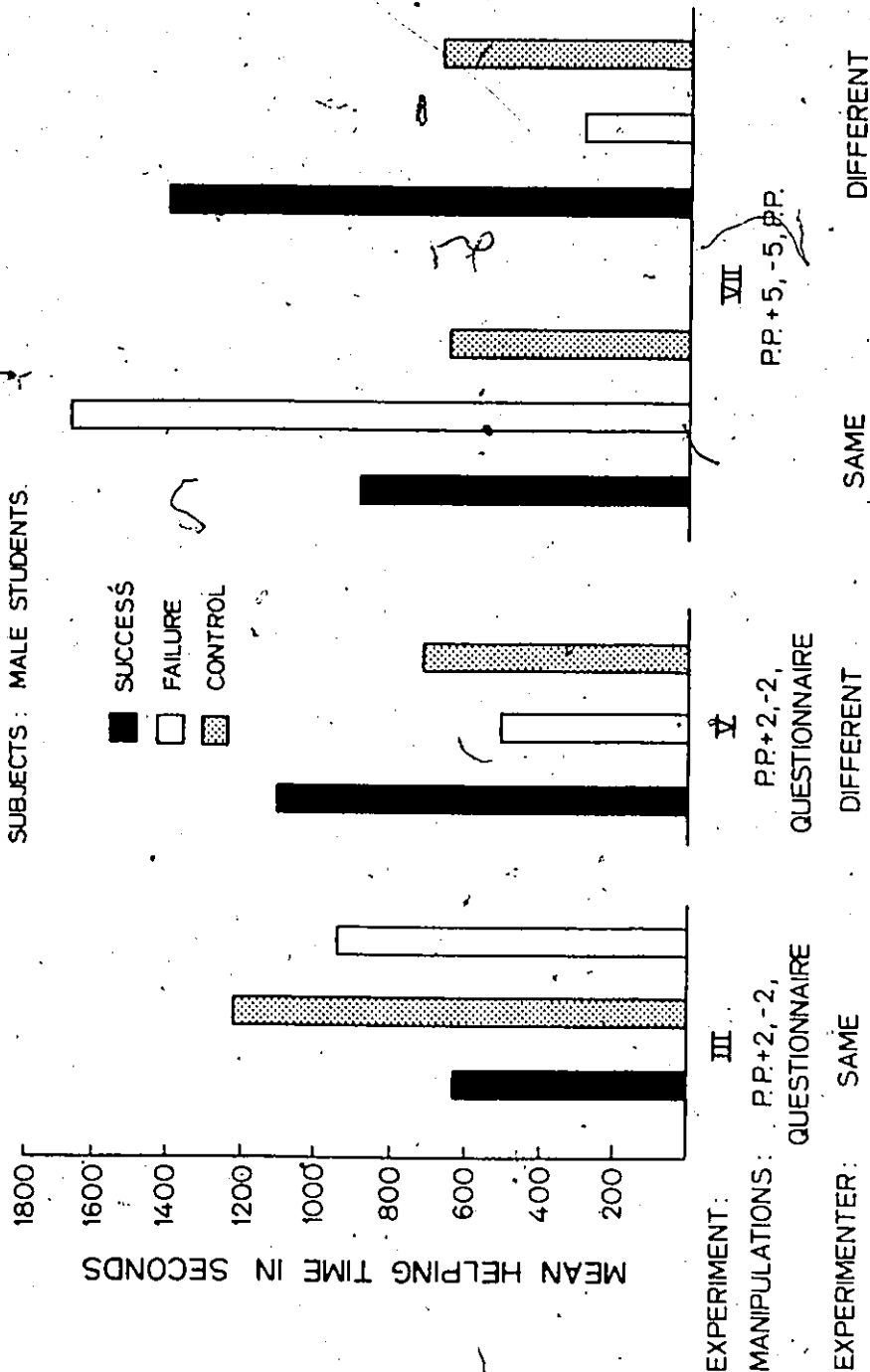
Further support for this interpretation of the data is presented in figure 20.

 Insert figure 20 about here

This figure summarizes the results obtained in three different experiments (III, V and VII). The main feature of these data is that comparisons can readily be made between results obtained when a same versus a different experimenter

FIGURE 20

COMPARISON BETWEEN EXPERIMENTS



was used in the studies. In half of the data presented in figure 20 the experimenter was the same throughout and therefore knew the subject's prior performance on the motor task, and in the other half of the data, the experimenter requesting help was a different person and therefore did not know the subject's prior performance on the motor task. Only male subjects were included in these studies and they were all paid \$1.00 for their participation.

Experiments III and V are identical in all major aspects (performance prediction plus or minus two perfect trials or questionnaire for the control groups) except that in experiment III the experimenter requesting help was the same and in the experiment V he was a different person and did not know the subject's prior performance.

From the contrast of these two studies (III and V), it can be concluded that:

- 9) Whether the person requesting help is the same and knows the subject's prior performance on the motor task or is a different person who therefore does not know the subject's prior performance on the task is an important variable substantially affecting the results obtained.

In fact, in experiment III it was found that failure subjects helped the experimenter more than control subjects who, in turn, helped such a person more than success subjects.

However, in experiment V, when the person requesting help was different and therefore did not know the subject's prior performance on the task, a reversal of the foregoing findings was obtained. That is, success subjects helped the experimenter more than the controls who, in turn, helped more than failure subjects.

This finding clearly supports the proposed image-repair interpretation of the data. Indeed, since the person requesting help in experiment V did not know the subject's prior performance on the task, the failure subjects did not need to repair their image in the eyes of that person. This could be the reason why they helped less. The finding that control subjects helped the experimenter more in experiment III than in experiment V, also supports this image-repair interpretation.

One criticism of the conclusion(9) reached by contrasting the results of these two studies is that there were many minor differences between these experiments in addition to whether or not the person requesting help was the same or a different experimenter who knew or did not know the subject's prior performance on the task. To correct these flaws, experiment VII was conducted (the results of this study are included in figure 20). All variables in this study were kept constant across treatments except that half the subjects in each group were asked for help by the same

person who therefore knew their previous performance on the task and the other half of the subjects were asked for help by a different person who consequently did not know their performance.

The results obtained in this study fully support the conclusion reached by contrasting the results of experiment III with those of experiment V, even though the manipulations of success and failure used in study VII were more powerful and the control groups performed the motor task instead of a personality questionnaire.

Thus, in light of the results presented in figures 19 and 20, an image-repair interpretation of the findings appears fully supported when the person requesting help is the same and therefore knows the subject's prior performance on the task. However, the data obtained when the person requesting help is a different person who does not know the subject's prior performance on the task are possibly best accounted for by a "warm glow of success" (Isen, 1970) interpretation.

This explanation can be summarized briefly as follows:

Success subjects momentarily feel "good" or "happy" and by helping someone they prolong in time their good feeling. Failure subjects momentarily feel "bad" or unhappy" and to help a person who is ignorant of their failure does not accomplish the same positive effect on their feeling as to help someone who knows of it. This could be one reason why

these subjects helped someone who knew of their failure (same) more than they helped someone who did not know of their failure (different). However, since this explanation has not been directly subjected to test in this programme of research, it is still hypothetical.

The last conclusion and its interpretation are also supported by the data presented in figure 21.

 Insert figure 21 about here

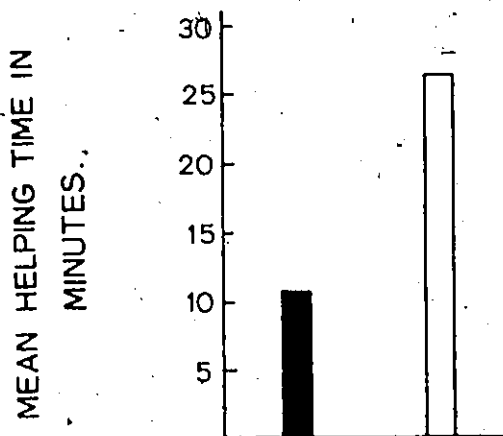
This figure summarizes some of the data obtained in experiment IX, X and XI. All subjects were male undergraduates. From the results of experiment IX it can be concluded that:

- 10) a trend similar to that obtained in previous studies is found when the task on which the subjects succeeded or failed is changed. Subjects who failed on a short mental ability test helped a person who knew of their failure more than subjects who succeeded on the test.

This outcome adds generality to the previous findings. The results of experiments X and XI add even more generality to these findings since completely different manipulations of success and failure were used in these studies (above or below the norm on a long I.Q. battery of tests in experiment X, and above or below the class mean on a real exam in experiment XI), and a new dependent measure, the donation of money to a worthy cause, was observed in both studies.

FIGURE 21

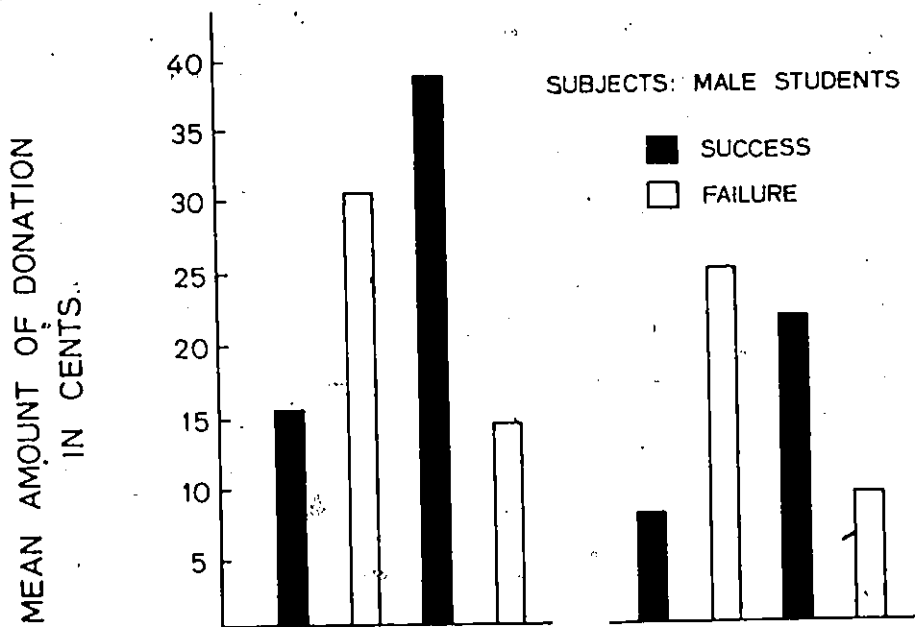
COMPARISON BETWEEN NATURALISTIC STUDIES



EXPERIMENT: IX

MANIPULATIONS: ABOVE NORM I.Q. BELOW NORM I.Q.

EXPERIMENTER: SAME



SUBJECTS: MALE STUDENTS

■ SUCCESS
□ FAILURE

EXPERIMENT: X

MANIPULATIONS: ABOVE I.Q. BELOW I.Q. ABOVE I.Q. BELOW I.Q.

EXPERIMENTER: SAME DIFFERENT

XI

ABOVE MEAN EXAM BELOW MEAN EXAM ABOVE MEAN EXAM BELOW MEAN EXAM

SAME DIFFERENT

11) Despite these major changes, similar trends as obtained previously were found: failure subjects helped the same experimenter who therefore knew of their prior performance more than success subjects, but the success subjects helped a different person who therefore did not know of their prior performance more than failure subjects.

Since these findings replicate previously reported ones, these also support the image-repair interpretation of the data proposed above.

Three other conclusions derived from the data presented in Figure 21 are worth mentioning here.

In experiment XI, subjects were not randomly assigned to treatments as was the case in all previous experiments including experiment X.

12) This, however, produced no change in the direction of the data trends.

This finding also demonstrates that these results are relevant to naturalistic conditions.

Secondly, subjects in experiments IX and XI were not paid for their participation but similar trends were obtained even though the dependent and independent variables were different in the two studies. The results of these experiments are also similar to those obtained in experiments in which subjects were paid for their participation (experiment VII

for instance).

13) Thus, payment of subjects does not appear to influence the direction of the results.

However, payment did influence the amount of money donated to charity as can be seen by contrasting the results of experiment X with those of experiment XI.

14) Subjects who were paid for their participation donated on the average, more money to a worthy cause than unpaid subjects.

This is not surprising since it can be argued on a probability basis, that subjects in experiment X had an average of one dollar more in their pocket than subjects in experiment XI since they were paid one dollar and the subjects in experiment XI were not paid. It is also important to recall that subjects in experiment X were paid in change. This is possibly the reason why it was observed that the averages of the money donated by each group were larger in experiment X than in experiment XI.

Future Research

Given the generalizability of the results reported in this programme of research, a few additional experiments can be suggested that would further enhance the comprehensiveness of these findings.

The first would be the study of the effects of success

and failure on helping behaviour with widely different populations than have been used here. To some extent, this is already under investigation in other laboratories. Indeed, as mentioned previously Isen, Horn and Rosenhan (1973) have obtained similar trends with children. They also found that if the charity was presented as somehow related to an experimenter who knew of the child's failure, this increased the children generosity. However, if the charity was not related to the experimenter the prior experience of success promoted private charitability. Similarly, Staub (1968) had shown that failure sometimes promoted giving. It will be recalled that (Staub (1968) asked failure children to share an extra piece of candy with a peer in the presence of an experimenter. Isen (1970) studies on the other hand dealt with a situation in which the opportunity for image-repair was absent for the failure subjects.

A second suggestion would be to investigate the effects of success and failure on other dependent variables such as, for instance, cheating behaviour. The present research demonstrates that subjects are willing to help more in order to look good or to repair their damaged self-image. The question then is: Would they be willing to cheat or to commit an immoral act to accomplish this goal? If the interpretation of the above findings is correct, an affirmative answer would be predicted, but only empirical data can answer this question.

Four other suggestions appear important; first a 2 (same versus different experimenter) x 3 (treatments: success, failure and control) X 2 (skill versus chance task) factorial appears the logical next experiment in this programme of research. This design would give the experimenter additional information not yet available. For instance, do subjects who succeed by chance also help a different person who does not know of their performance more than control or failure subjects as was the case when the task was one presumably requiring skill?

Second, when in the previously reported studies the same versus a different experimenter was used, this factor always covaried with whether that person knew (same) or did not know the subject's prior performance on the task (different). In order to determine if this covariation is important or if rather it is the latter factor which is important, a new experiment should be conducted. This experiment should use two experimenters, one for the implementation of the treatments and the other for requesting help subsequently. For half the subjects in all treatments, the first experimenter should tell the second experimenter, in the subject's presence, the performance (success, failure or control) of the subject on the antecedent task. For the other half of the subjects, the first experimenter should tell still in the presence of the subject, something irrelevant

to the second experimenter. Thus, the second experimenter would always be a different person, but in half the cases, he would know the subject's prior performance on the antecedent task and in the other half he would not. This should determine if the knowledge or absence of knowledge concerning the subject's prior performance is a critical factor capable of accounting for the results.

A third suggestion would be to more strongly and directly test the image-repair explanation of the results obtained. A simple way of accomplishing this would be to have the subjects complete two reliable and highly correlated self-esteem tests, one after the implementation of the treatments and the other after having helped the experimenter. The order of presentation of the tests should, of course be systematically varied within treatments. If the image-repair explanation is valid, then the failure subjects should get, on the average, higher self-esteem scores on the second measurement than on the first.

The last suggestion concerns a design not often used in social psychology because it is practically impossible to implement without suspicion in the subjects but which is theoretically possible and potentially rich in information. This involves a within-subjects design. It is felt that if the findings of the present investigation could be replicated with a within-subjects design instead of the between-subjects

design used here, even more confidence in the conclusions would be obtained. Figure 22 graphically represents the different phases and some hypothetical results such an experiment could yield.

Insert figure 22 about here

One of the many problems associated with this suggestion is that repeated requests for help must be made and this is likely to arouse suspicion. Another problem is whether it is possible to manipulate the independent variable a number of times in a row without also arousing suspicion of experimental control among the subjects. This design is commonly used in learning and memory experiments but it is debatable whether helping behaviour is amenable to such a design. It should certainly require a great deal of creativity and ingenuity on the part of the experimenter.

Final Comments

Altruism or helping behaviour, as discussed in the early chapters of this report, has been generally defined vaguely and very broadly. Most researchers have used every day definitions of the term. In this regard, Leed's definition (1963) is a good example: an altruistic act (a) is an end in itself; it is not directed at gain, (b) is

Figure 22

Hypothetical results of the suggested
within-subjects design

PHASES:	BASELINE	TRAINING I		TRAINING II	
		SUCCESS FAILURE OR CONTROL	HELPING I	SUCCESS FAILURE OR CONTROL	HELPING II
DEPENDENT VARIABLE: example: number of sheets sorted per minute	subject A		same experimenter		same experimenter
		success		success	
Dependent variable	subject B		same experimenter		same experimenter
		failure		failure	
Dependent variable	subject C		same experimenter		same experimenter
		success		failure	
Dependent variable	subject D		different experimenter		different experimenter
		failure		failure	

emitted voluntarily, and (c) does good. The definition adopted in this dissertation is somewhat more precise: requested or unrequested behaviour carried out voluntarily to benefit another without anticipation of tangible reward from external sources. One attempt to overcome the vagueness of these theoretical terms is the use of operational definitions which specify the operations that measure the concepts. In this dissertation, this notion of operational definition has been used throughout. Helping behaviour has been defined either as the time spent helping the experimenter with the sorting task, the number of sheets sorted, the number of hours or experiments volunteered for, or the amount of money donated to a worthy cause.

Control groups were included in the experiments whenever possible. The purpose of these groups was to permit comparisons with the behaviour of the experimental groups so as to allow us to rule out alternative hypotheses that might account for the results. Control groups also give a baseline level of performance, that is, a measure of the dependent variable as it occurs when the subjects do not experience either success or failure. This procedure permits the assessment of the direction of the effects caused by the independent treatments.

Variations in the definitions of the dependent and independent variables have also been successively implemented in this programme of research. For instance, success and

failure have been defined in five different ways and four different definitions of what constituted the control group have been investigated. These variations add generality to the findings.

Unobtrusive measures of the dependent variables have been successfully observed and very few subjects were discarded for suspicion.

As Brunswik points out:

"The probabilistic character of behavioral laws is not primarily due to limitations in the researcher and his means of approach but rather to imperfections inherent in the potentialities of adjustment on the part of the behaving organism living in a semi-chaotic environmental milieu. In this sense even an omniscient infinite intellect, when turning psychologist, would have to adopt a probabilistic approach (1952, p. 28):"

Although this is not unique to our research, it is nevertheless the fundamental reason why statistical tests have been computed and confidence levels reported in every study.

Internal and external validity are two other essential aspects of an experiment with any scientific value. As Campbell and Stanley (1966) pointed out:

"Internal validity is the basic minimum without which any experiment is uninterpretable: did in fact the experimental treatments make a difference in this specific experimental instance? External validity asks the question of generalizability: to what populations, settings, treatment variables, and measurement variables can this effect be generalized? Both types of criteria are

obviously important, even though they are frequently at odds in that features increasing one may jeopardize the other. While internal validity is the sine qua non, and while the question of external validity, like the question of inductive inference, is never completely answerable, the selection of designs strong in both types of validity is obviously our ideal (p.5)."

In the present programme of research, internal validity cannot be questioned. Reliable differences between treatments were obtained and replicated on numerous occasions and special efforts were made to render the control groups as comparable to the experimental groups as possible.

Lack of external validity, on the other hand, always occurs to some extent in any programme of research even if the experimental procedures are beyond reproach. It is, in practice, impossible to reach perfect external validity. There will always be certain populations, certain settings or ways to define the dependent or independent variables that have not been assessed.

Nevertheless, the research reported here can safely be said to have unusually good external validity. Both male and female subjects and experimenters have been included and a variety of experimental settings as well as dependent and independent measures have been used. The only fair criticism concerning external validity applicable to this research has to do with the population employed: all subjects were students. However, even within this population, variations

have been attempted; first year and second year students were observed as well as summer school students. Although first year students mainly were used, this variation indicated that the findings probably hold for the student population as a whole. But as suggested in the future research section of this chapter, more research on other populations is needed before we can conclude that these findings also apply to them.

Two final comments are worth mentioning; experimental bias, a possible source of the results obtained in many experiments was carefully controlled in one experiment reported here and was discarded as an explanation of the effects observed.

Finally, ethical problems, often associated with social psychology, were avoided by the use of weak manipulations and careful debriefing whenever necessary. Stronger experimental results might have been obtained with more powerful and salient manipulations of success and failure but ethical difficulties would then undoubtedly have been serious. This was judged unnecessary given the statistically significant and reliable results obtained.

APPENDIX I

MATERIAL USED IN THE EXPERIMENTS

1. Given to all subjects in experimental groups from experiments 1 to IV and by all subjects in experiment VI.

Instructions

Listen carefully while I read these instructions over with you. This experiment is designed to study the relationships between responses on three different questionnaires and performance on a simple motor task.

First, you will be given two of these tests to complete and then you will do the motor task.

In order that you may evaluate your own performance on the motor task you may like to know that we have found that high school students achieve on the average 6 perfect trials out of 10.

It is well known that motor ability improves with age so you should do somewhat better than that.

Before you begin the motor task you will be allowed (2)5 practice trials and then I will ask you to predict how many perfect trials you think you will achieve out of the 20 (10) trials.

After you finish the motor task you will be given the remaining questionnaire to complete at home if you want. If you accept, it will be important that you work on this questionnaire tonight and only between 10 and 11 o'clock. This is important because we don't want some people completing

this questionnaire when they are tired, while others do it when they are not.

We will be running this experiment for two days so I would appreciate if you would return this questionnaire to me the day after tomorrow, that will be _____.

However, be sure to complete it tonight between 10 and 11 p.m. since fatigue is a crucial factor in this experiment. Do you have any questions?

11. Given only to control subjects from experiment 1 to IV.

Instructions

Listen carefully while I read these instructions over with you. This experiment is designed to study the relationships between responses on four different questionnaires.

First you will be given three of these tests to complete here. After that you will be given the remaining questionnaire to complete at home if you want. If you accept, it is important that you work in this questionnaire tonight and only between 10 and 11 o'clock. This is important because we don't want some people completing this questionnaire when they are tired, while others do it when they are not.

We will be running this experiment for two days so I would appreciate it if you would return the questionnaire to me by mail the day after tomorrow, that will be _____ . However, be sure to complete it tonight between 10 and 11 p.m. since fatigue is a crucial factor in this experiment.

Do you have any questions?

111. Given to all subjects in experimental groups of experiment V and to all subjects in experiment VII.

Instructions

Listen carefully while I read these instructions over with you. You will take part in two different experiments. After you have completed this experiment, I will tell you where to go for the second experiment.

First, you will be given two of these tests to complete and then you will do the motor task.

In order that you may evaluate your own performance on the motor task you may like to know that we have found that high school students achieve on the average 6 perfect trials out of 10.

It is well known that motor ability improves with age so you should do somewhat better than that.

Before you begin the motor task you will be allowed 5 practice trials and then I will ask you to predict how many perfect trials you think you will achieve out of the total 20 trials.

After you finish the motor task you will be given the remaining questionnaire to complete at home if you want. If you accept, it will be important that you work on this questionnaire tonight and only between 10 and 11 o'clock.

This is important because we don't want some people completing this questionnaire when they are tired, while others do it when they are not.

We will be running this experiment for two days so I would appreciate if you would return this questionnaire to me the day after tomorrow, that will be _____ . However, be sure to complete it tonight between 10 and 11 p.m. since fatigue is a crucial factor in this experiment. Do you have any questions?

IV. Given only to control subjects in experiment V.

Instructions

Listen carefully while I read these instructions over with you. You will take part in two different experiments. After you have completed this experiment, I will tell you where to go for the second experiment.

First you will be given three of these tests to complete here. After that you will be given the remaining questionnaire to complete at home if you want. If you accept, it is important that you work in this questionnaire tonight and only between 10 and 11 o'clock. This is important because we don't want some people completing this questionnaire when they are tired, while others do it when they are not.

We will be running this experiment for two days so I would appreciate it if you would return the questionnaire to me the day after tomorrow, that will be _____ . However, be sure to complete it tonight between 10 and 11 p.m. since fatigue is a crucial factor in this experiment.

Do you have any questions?

A) Answered by all subjects in laboratory.

Instructions

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief: obviously there are no right or wrong answers.

Your answers to the items on this inventory are to be recorded on a separate answer sheet which is loosely inserted in the booklet. REMOVE THIS ANSWER SHEET NOW. Print your name and any other information requested by the examiner on the answer sheet, then finish reading these directions. Do not open the booklet until you are told to do so.

Please answer these items carefully but do not spend too much time on any one item. Be sure to answer every item. Find the number of the item on the answer sheet and put a cross (x) through the letter a or b, whichever you choose as the statement more true.

In some instances you may discover that you believe

both statements or neither one. In such cases, be sure to select the one you most strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice: do not be influenced by your previous choices.

(1)

1. a. Children get into trouble because their parents punish them too much.
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try some people just don't like you.
b. People who can't get others to like them don't understand how to get along with others.
8. a. Heredity plays the major role in determining one's personality.
b. It is one's experiences in life which determine what they're like.
9. a. I have often found that what is going to happen will happen.
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

(2)

11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.
b. This world is run by the few people in power, and there is not much the little guy can do about it.
13. a. When I make plans, I am almost certain that I can make them work.
b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. a. There are certain people who are just no good.
b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.
b. Many times we might just as well decide what to do by flipping a coin.
16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are the victims of forces we can either understand, nor control.
b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
b. There really is no such thing as "luck."
19. a. One should always be willing to admit mistakes.
b. It is usually best to cover up one's mistakes.
20. a. It is hard to know whether or not a person really likes you.
b. How many friends you have depends upon how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.

(3)

21. b. Most misfortunes are the result of lack of ability
ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political
corruption.
b. It is difficult for people to have much control over
the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at
the grades they give.
b. There is a direct connection between how hard I
study and the grades I get.
24. a. A good leader expects people to decide for themselves
what they should do.
b. A good leader makes it clear to everybody what their
jobs are.
25. a. Many times I feel that I have little influence over
the things that happen to me.
b. It is impossible for me to believe that chance or
luck plays an important role in my life.
26. a. People are lonely because they don't try to be
friendly.
b. There's not much use in trying too hard to please
people, if they like you, they like you.
27. a. There is too much emphasis on athletics in high school.
b. Team sports are an excellent way to build character.
28. a. What happens to me is my own doing.
b. Sometimes I feel that I don't have enough control
over the direction my life is taking.
29. a. Most of the time I can't understand why politicians
behave the way they do.
b. In the long run the people are responsible for bad
government on a national as well as on a local level.

ANSWER SHEET

Answer the questions by placing a cross (x) on the letter a or b.

- | | | | | | |
|-----|---|---|-----|---|---|
| 1. | a | b | 16. | a | b |
| 2. | a | b | 17. | a | b |
| 3. | a | b | 18. | a | b |
| 4. | a | b | 19. | a | b |
| 5. | a | b | 20. | a | b |
| 6. | a | b | 21. | a | b |
| 7. | a | b | 22. | a | b |
| 8. | a | b | 23. | a | b |
| 9. | a | b | 24. | a | b |
| 10. | a | b | 25. | a | b |
| 11. | a | b | 26. | a | b |
| 12. | a | b | 27. | a | b |
| 13. | a | b | 28. | a | b |
| 14. | a | b | 29. | a | b |
| 15. | a | b | | | |

B) Answered by all subjects in laboratory

Questionnaire

NAME _____ CHRISTIAN NAMES _____

AGE _____ SEX _____ OCCUPATION _____

Instructions

Here are some questions regarding the way you behave, feel and act. After each question there is a "Yes", a "?" and a "No".

Try and decide whether "Yes" or "No" represents your usual way of acting or feeling; then put a circle round the "Yes" or "No". If you find it absolutely impossible to decide, put a circle round the "?", but do not use this answer except very occasionally. Work quickly, and don't spend too much time over any question; we want your first reaction, not a long drawn-out thought process! The whole questionnaire shouldn't take more than a few minutes. Be sure not to omit any questions. Now go ahead, work quickly, and remember to answer every question. There are no right or wrong answers, and this isn't a test of intelligence or ability, but simply a measure of the way you behave.

1. Are you happiest when you get involved in some project that calls for rapid action? yes ? no
2. Do you sometimes feel happy, sometimes depressed, without any apparent reason? yes ? no
3. Does your mind often wander while you are trying to concentrate? yes ? no
4. Do you usually take the initiative in making new friends? yes ? no
5. Are you inclined to be quick and sure in your actions? yes ? no
6. Are you frequently "lost in thought" even when supposed to be taking part in a conversation? yes ? no
7. Are you sometimes bubbling over with energy and sometimes very sluggish? yes ? no

8. Would you rate yourself as a lively individual? yes ? no
9. Would you be very unhappy if you were prevented from making numerous social contacts? yes ? no
10. Are you inclined to be moody? yes ? no
11. Do you have frequent ups and downs in mood, either with or without apparent cause? yes ? no
12. Do you prefer action to planning for action? yes ? no
13. Are your daydreams frequently about things that can never come true? yes ? no
14. Are you inclined to keep in the background on social occasions? yes ? no
15. Are you inclined to ponder over your past? yes ? no
16. Is it difficult to "lose yourself" even at a lively party? yes ? no
17. Do you ever feel "just miserable" for no good reason at all? yes ? no
18. Are you inclined to be overconscientious? yes ? no
19. Do you often find that you have make up your mind too late? yes ? no
20. Do you like to mix socially with people? yes ? no
21. Have you often lost sleep over your worries? yes ? no
22. Are you inclined to limit your acquaintances to a select few? yes ? no
23. Are you often troubled about feelings of guilt? yes ? no
24. Do you ever take your work as if it were a matter of life or death? yes ? no
25. Are your feelings rather easily hurt? yes ? no
26. Do you like to have many social engagements? yes ? no
27. Would you rate yourself as a tense or "highly-strung" individual? yes ? no

28. Do you generally prefer to take the lead in group activities? yes ? no
29. Do you often experience periods of loneliness? yes ? no
30. Are you inclined to be shy in the presence of the opposite sex? yes ? no
31. Do you like to indulge in a reverie (day-dreaming)? yes ? no
32. Do you nearly always have a "ready answer" for remarks directed at you? yes ? no
33. Do you spend much time in thinking over good time you have had in the past? yes ? no
34. Would you rate yourself as a happy-go-lucky individual? yes ? no
35. Have you often felt listless and tired for no good reason? yes ? no
36. Are you inclined to keep quiet when out in a social group? yes ? no
37. After a critical moment is over, do you usually think of something you should have done but failed to do? yes ? no
38. Can you usually let yourself go and have a hilariously good time at a gay party? yes ? no
39. Do ideas run through your head so that you cannot sleep? yes ? no
40. Do you like work that requires considerable attention? yes ? no
41. Have you ever been bothered by having a useless thought come into your mind repeatedly? yes ? no
42. Are you inclined to take your work casually, that is, as a matter of course? yes ? no
43. Are you touchy on various subjects? yes ? no
44. Do other people regard you as a lively individual? yes ? no

45. Do you often feel disgruntled? yes ? no

46. Would you rate yourself as a talkative individual? yes ? no

47. Do you have periods of such great restlessness that you cannot sit long in a chair? yes ? no

48. Do you like to play pranks on others? yes ? no

C) Answered in laboratory only by subjects in control groups from experiment 1 to V.

Questionnaire

Please mark each statement in the following way:

If the statement describes how you usually feel, put a check (✓) in the column, "like me".

If the statement does not describe how you usually feel, put a check (✓) in the column "unlike me".

There are no right or wrong answers.

	like me	unlike me
1. I'm pretty sure of myself.	_____	_____
2. I often wish I were someone else.	_____	_____
3. I'm easy to like.	_____	_____
4. There are lots of things about myself I'd change if I could.	_____	_____
5. I'm a lot of fun to be with.	_____	_____
6. I always do the right things.	_____	_____
7. I'm proud of my work.	_____	_____
8. Someone always has to tell me what to do.	_____	_____
9. I'm often sorry for the thing I do.	_____	_____
10. I'm popular with persons my own age.	_____	_____
11. I'm never unhappy.	_____	_____
12. I'm doing the best work that I can.	_____	_____
13. I give in very easily.	_____	_____
14. I can usually take care of myself.	_____	_____
15. I'm pretty happy.	_____	_____

- | | like me | unlike me |
|---|---------|-----------|
| 16. I understand myself. | _____ | _____ |
| 17. It's pretty tough to be me. | _____ | _____ |
| 18. People usually follow my ideas. | _____ | _____ |
| 19. No one pays much attention to me. | _____ | _____ |
| 20. I'm not doing as well in school as I'd like to. | _____ | _____ |
| 21. I can make up my mind and stick to it. | _____ | _____ |
| 22. I really don't like being a man-woman. | _____ | _____ |
| 23. I have a low opinion of myself. | _____ | _____ |
| 24. I often feel ashamed of myself. | _____ | _____ |
| 25. I'm not as nice looking as most people. | _____ | _____ |
| 26. If I have something to say, I usually say it. | _____ | _____ |
| 27. I don't care what happens to me. | _____ | _____ |
| 28. I'm a failure. | _____ | _____ |
| 29. Most people are better liked than I am. | _____ | _____ |
| 30. I always know what to say to people. | _____ | _____ |
| 31. I often get discouraged in my work. | _____ | _____ |
| 32. I can't be depended on. | _____ | _____ |

D) Done in laboratory only by subjects in the two experimental groups for experiments I to V, and by all subjects in experiments VI to VIII.

Motor task performance

Practice Trial			Score
----------------	--	--	-------

	1-	3-	5-
--	----	----	----

	2-	4-	
--	----	----	--

Performance prediction:

Trial	1-	11-
-------	----	-----

	2-	12-
--	----	-----

	3-	13-
--	----	-----

	4-	14-
--	----	-----

	5-	15-
--	----	-----

	6-	16-
--	----	-----

	7-	17-
--	----	-----

	8-	18-
--	----	-----

	9-	19-
--	----	-----

	10-	20-
--	-----	-----

1. Experiment I includes only 2 practice trials and only 10 trials.

- E) Answered at home only by subjects in the two experimental groups from experiments I to V, and by all subjects in experiments VI to VIII.

NAME: _____

Questionnaire

CONFIDENTIAL

For each of the following questions, circle the number which corresponds most closely to your opinion. Read each question as well as the alternative responses carefully.

- (1) How much did you like or dislike this experiment?
 1 2 3 4 5 6 7
 strongly don't care strongly
 dislike one way or the like
 other
- (2) How confident were you about your prediction on the motor task?
 1 2 3 4 5 6 7
 very neutral not at all
 confident confident
- (3) How well do you think you performed on the motor task?
 1 2 3 4 5 6 7
 very neutral very
 badly well
- (4) If you were to do the motor task again, do you think your score would decrease or increase?
 1 2 3 4 5 6 7
 increase stay the decrease
 very much same very much
- (5) Did you feel embarrassed in this experiment?
 1 2 3 4 5 6 7
 not at all a little a great
 deal
- (6) Did you feel free to help the experimenter?
 1 2 3 4 5 6 7
 not at all neutral very
 much

(9) Have you helped somebody in the past month (if yes, describe briefly)?

(10) Name the three main qualities of an altruistic person?

(1)

(2)

(3)

G) Caller's Instructions

Is Mr. (s) _____ there? / It's

Mr. (s) Hunter calling from the Red Cross Association. I am calling you in regard to a blood shortage we have in the city. I am wondering if you would be willing to give blood?

Subject: " "

Caller: We work on a volunteer basis and I only have a nurse there between 2 - 3:00 tomorrow afternoon. Can you make it then?

Subject: If YES

Caller: Tell the address of the Blood Clinic

Subject: If No

Caller: Would you be willing to set another date and I can arrange to have a nurse there then?

Subject: " "

Caller: "Thank you".

CLINIC ADDRESS:

H) Given to all subjects in experiment VIII.

Instructions

Listen carefully while I read these instructions over with you. This experiment is designed to study the relationships between responses on three different questionnaires and performance on a simple motor task.

First, you will be given two of these tests to complete and then you will do the motor task.

Although performance on this motor task has been previously found both in the United States and in Canada to be very much random or "luck" related, we ask you to do your best.

Before you begin the motor task you will be allowed 5 practice trials and then I will ask you to predict how many perfect trials you think you will achieve out of the total 20 trials.

After you finish the motor task you will be given the remaining questionnaire to complete at home if you want. If you accept, it will be important that you work on this questionnaire tonight and only between 10 and 11 o'clock. This is important because we don't want some people completing this questionnaire when they are tired, while others do it when they are not.

We will be running this experiment for two days so I would appreciate it if you would return this questionnaire

to me the day after tomorrow, that will be _____.

However, be sure to complete it tonight between 10 and 11 p.m.

since fatigue is a crucial factor in this experiment. Do

you have any questions?

I)

Instructions

Today you will be given a battery of tests designed to measure general intelligence. The battery of tests that you will complete today is composed of some of the best and most reliable Intelligence Tests. As a whole, this battery have proved quite successful in predicting academic performance, ability to adjust quickly and efficiently to new situations, and recently it has been suggested by psychologists to be a excellent measure of "career" success in science as well as in Arts and Business.

Today you will complete this battery and at the end of the period, I will schedule you for another time later on; at this second period, I will communicate to you personally your results in each test, and you will receive \$1.00 for your participation. Your results will be strictly confidential between you and I and this information will be used for research purpose ONLY. More information about this research will also be given to you at that time.

Thank you for your cooperation.

J)

SUBSTITUTION TEST

This kind of test is almost always a part of any existing General Intelligence Measure. More specifically, this test has proved useful as a predictor of academic success particularly at the University level.

On the following three pages there are three different substitution tests. The symbol substitution may not be the same from one test to another. The appropriate symbol substitution are presented on the top of each page.

Here is an example of the Test:

1	2	3	4	5	6	7	8	9
X	+	-	∟	L	T	∨	∧	O

1	5	7	3	8

Do Not Turn This Page until you hear the signal "GO". Stop when you hear the signal "STOP". Do not turn the page until you are told so. If you complete the test before the "STOP" signal, review your work on that page. Do not turn the page. You will be given one minute per page. Try to work quickly and accurately.

K)

1	2	3	4	5	6	7	8	9	=
-	M	□	L	U	0	A	X		

examples

2	1	3	1	2	4	3	5	3	1	2	1	4	2	3	5	2	3	1	4	6	3	

1	5	4	2	7	6	3	5	7	2	8	5	4	6	3	7	2	8	1	9	5	8	4	7	3

6	2	5	1	9	2	8	3	7	4	6	5	9	4	8	3	7	2	6	1	5	4	6	3	7

C.	1/2C.	TOTAL
----	-------	-------

CODE B
(8-15)

L)

1	2	3	4	5	6	7	8	9
÷)	+	F	7	V	(-	T

exemples

2	1	4	6	3	5	2	1	3	4	2	1	3	1	2	3	1	4	2	6	3	1	2	5	1
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

3	1	5	4	2	7	4	6	9	2	5	8	4	7	6	1	8	7	5	4	8	6	9	4	3
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

1	8	2	9	7	6	2	5	4	7	3	6	8	5	9	4	1	6	8	9	3	7	5	1	4
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

9	1	5	8	7	6	9	7	8	2	4	8	3	5	6	7	1	9	4	3	6	2	7	9	3
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Temps (") _____ Score (No bonnes) _____

M)

SUBSTITUTION

1	2	3	4	5	6	7	8	9
-	□	□	∇	□	□	∇	□	□

EXAMPLES																							
2	1	3	1	2	3	4	5	3	1	2	1	3	2	1	4	2	3	5	2	3	1	4	1
5	4	2	7	6	3	5	7	2	3	5	4	6	3	7	3	8	1	9	5	3	4	6	2
5	1	9	2	8	3	7	4	6	5	9	4	8	3	7	2	6	1	5	4	9	3	7	8

$(1 \times) + (1/2 \times) =$

N)

ARITHMETIC TEST

This test was designed by psychologists at the university and is an excellent measure of how quickly and efficiently you can think and work.

On the next page there is a series of 2-step arithmetic problems. The problems consist of two lines of simple arithmetic. You are to solve each line separately.

Remember the result DO NOT WRITE IT DOWN. If the top line is larger than the bottom line, SUBTRACT the bottom from the top and write down the answer. If the top line is smaller than the bottom, ADD the two together and write in the answer.

Example: $6+8-2$

$3-1+4$

1. Add the first line across: $6+8-2=12$ Remember the results, but don't write it down.
2. Add the second line across: $3-1+4=6$ Remember the results, but don't write it down.
3. If the top line sum (12) is LARGER than the bottom line sum (6), you subtract the bottom sum from the top sum for your answer 6 which you write down.

The rule is: **SUBTRACT WHEN YOU CAN WITHOUT A NEGATIVE NUMBER; OTHERWISE, ADD.**

Here are two practice problems:

$$5 - 3 + 1$$

$$6 + 2 - 3$$

The answer is 8 since the top line sum, 3, is smaller than the bottom line 5, you add.

$$7 + 6 + 1$$

$$8 - 7 + 9$$

The answer is 4 since the top line sum, 14, is larger than the bottom line, therefore, you subtract.

ARITHMETIC TEST

$$\begin{array}{r} 7+8+5 \\ 9-4-3 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 6+4+5 \\ 8+6+7 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3-2+5 \\ 9+5-3 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 5+8+8 \\ 6+3+3 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 8-5+3 \\ 6+3-4 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3+8-7 \\ 5+6-2 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 9-4+8 \\ 3+6-1 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 9-3+8 \\ 9+3-6 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 5+1-3 \\ 4-8+6 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3+9-4 \\ 5+8-4 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 2+9-1 \\ 8-4+6 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 9-4+2 \\ 7+4+4 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 7-1-2 \\ 6+5-6 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 7-2+8 \\ 9+2-7 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 9+3-7 \\ 6-6+3 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3+9+5 \\ 3+9-5 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 9+5-6 \\ 6-8+3 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 9+2-8 \\ 7+5+6 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 1+5-6 \\ 5-4+7 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 8+6-2 \\ 6+7-8 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3+9-5 \\ 7+4-3 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 8-6+2 \\ 9+5+3 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 8-2+7 \\ 7+5+6 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 2+7+6 \\ 5-4+7 \end{array} \underline{\hspace{2cm}}$$

$$\begin{array}{r} 3-7+8 \\ 6+7-8 \end{array} \underline{\hspace{2cm}}$$

P)

ANAGRAM OR SCRAMBLED WORDS
TEST

This is a test of your facility with words. As you may know, Vocabulary Tests have proved to be the best single measure of General Intelligence. This test measures one aspect of vocabulary.

In the next two pages are lists of common words with the letters scrambled. Try to make words by unscrambling the letters and write them in the appropriate blanks.

DO NOT START UNTIL YOU ARE TOLD TO DO SO. When I say "GO" start to work on the first page ONLY. Do not start to work on the second page until you are told so. When I say "STOP", please cooperate by stoping right away.

Are there any questions?

Q)

ANAGRAM OR SCRAMBLED WORDS TEST

PART I

- UGARS _____
- CHARI _____
- NTRAI _____
- RTYPA _____
- ORLAS _____
- BEAHC _____
- ODELM _____
- KLRCE _____
- PTULA _____
- AICTN _____
- OURY _____
- EEGRN _____
- EKMA _____
- LODG _____
- DAIR _____
- DNFI _____
- KCOR _____
- EVRY _____
- WITA _____
- OVEM _____

R.)

ANAGRAM OR SCRAMBLED WORDS TEST

PART II

- PIAOT _____
- QABCR _____
- THOAN _____
- NATJY _____
- TGAON _____
- RNOGI _____
- OGUHL _____
- ARDPI _____
- NOCRA _____

S)

NAME: _____

BATTERY OF I.Q.

TESTS

COLLEGE STUDENTS' NORMS YOUR SCORE

A) SUBSTITUTION NO.1: _____ _____

 SUBSTITUTION NO.2: _____ _____

 SUBSTITUTION NO.3: _____ _____

B) ARITHMETIC TESTS: _____ _____

C) ANAGRAM

 TEST NO.1: _____ _____

 TEST NO.2: _____ _____

Your overall result on this I.Q. battery of tests
indicate that you are _____
the average college student.

APPENDIX II

CORRELATIONAL FINDINGS

APPENDIX II

CORRELATIONAL FINDINGS

A criticism that most studies of altruism or helping behaviour are subjected to is that these generally failed to analyse other variables not directly related to their specific hypotheses. Although not our main purpose, throughout this programme of research, some personality questionnaires (Rotter's Internal-External locus of control scale, appendix I, section A; Eysenck's neuroticism and emotionality questionnaire, appendix I, section B; Coopersmith's (1967) self-esteem test, appendix I, section C;) were completed by the subjects. It will be recalled that these personality questionnaires were mainly used to implement the cover story of the studies. Nevertheless, correlations between scores obtained on these personality tests and the dependent measures of helping behaviour have periodically been assessed.

In addition, some biographical data such as number of brothers and sisters, family size, birth order position and parental income were also collected (see Personal data sheet, page 87), and the correlations between these and the various indices of helping were also periodically computed.

Personality Correlates

Rotter's (1966) Internal-External (I-E) locus of control scale measures the extent to which people think they are controlling their own rewards or how much they believe in fate or luck (external) rather than in their own efforts to attain some goal (internal).

The I-E scale was included in our studies because there is some conflicting evidence concerning its relationship with helping behaviour. Some studies (Gore and Rotter, 1963; Midlarsky, 1968;) have found that internal locus of control is correlated positively with altruism, while another study (Staub, 1968) reported that it is correlated positively with altruism following success, but negatively following failure. Thus, it is clear that further study is needed in this area.

Also, as our review of the literature indicates (chapter II), there has been little success in uncovering reliable correlations between personality traits and behavioral measures of helping behaviour, therefore, it was decided to include the two other personality tests since to our knowledge there has been no experimental evidence showing a relationship between either neuroticism or emotionality and altruism, nor between self-esteem and altruism.

Correlations between these personality questionnaires and helping behaviours were assessed in the following three

experiments: I (n = 30), III (n = 60) and IV (n = 40). The correlational findings obtained in each study will successively be reviewed.

Experiment I

Thirty male students participated in this study. The whole matrix of correlations obtained in this study between the various personality questionnaires and helping behaviour indices is presented in table XV.

Insert Table XV about here

In order to find out if some of these correlations were significant, a test for complete independence (Morisson, 1967) was computed. Essentially the procedure consists of computing two chi-squares, one related to the between personality questionnaires correlations and the other related to the between helping behaviour indices correlations. Assuming independence between those two chi-squares, we can sum them to obtain a new chi-square.

We also calculated an overall chi-square for the whole correlations matrix. With these chi-squares in hand, we can construct an F test to see whether or not the correlations between personality questionnaires and helping behaviour indices account for some of the variance. If this F-test turn out to be significant we will be able to conclude that these correlations are not significant. The results of this analysis are presented in table XVI.

TABLE XV

Matrix of correlations between personality
questionnaires and helping behaviour indices

(Experiment I, n = 30)

	I-E scale	Neuroticism (s-f)	Emotionality (s-f)	Neuroticism (l-f)	Emotionality (l-f)	self-esteem	social desirability	Performance prediction	no. of experiments	Total amount money asked	Ratio \$ / hour	Number of sheets sorted	Time spent	Speed
I-E scale	1	-.001	-.02	.03	.25	.007	-.31	-.15	.10	.24	.15	-.32	-.20	-.2
Neuroticism (s-f)	-.001	1	.03	.74	.05	-.46	-.29	.22	.29	-.15	.002	.087	-.005	.1
Emotionality (s-f)	-.02	.03	1	-.50	.83	.08	.23	.24	.29	.25	.30	-.23	.07	-.2
Neuroticism (l-f)	.03	.74	-.50	1	.09	-.56	-.66	.23	.13	-.21	-.04	.03	-.17	.2
Emotionality (l-f)	.25	.05	.83	.09	1	-.10	.11	-.15	.15	.19	.19	-.40	-.19	-.3
self- esteem	.007	-.46	.08	-.56	-.10	1	.34	-.43	-.25	.06	-.09	.11	.21	-.0
social desirability	-.31	-.29	.23	-.66	.11	.34	1	-.24	.19	.24	.06	.32	.09	-.4
Performance prediction	-.15	.22	.24	.23	-.15	-.43	-.24	1	.03	-.19	-.08	.007	-.12	-.00
No. of experiments	.10	.29	.29	.13	.15	-.25	.19	.03	1	.75	.41	-.36	-.28	-.1
Total amount money asked	.24	-.15	.25	-.21	.19	.06	.24	-.19	.75	1	.41	-.32	-.22	-.2
Ratio \$ / hour	.15	.002	.30	-.04	.19	-.09	.06	-.08	.41	.41	1	-.40	-.20	-.2
No. of sheets sorted	-.32	.087	-.23	.03	-.40	.11	.32	.007	-.36	-.32	-.40	1	.69	.73
Time spent	-.20	-.005	.07	-.17	-.19	.21	.09	-.12	-.28	-.22	-.20	.69	1	.056
Speed	-.23	.12	-.23	.20	-.32	-.06	-.43	-.001	-.18	-.23	-.29	.73	.056	1

Insert Table XVI about here

Thus $F_{43,91} = 1.88$ which is significant at $P < .05$. Therefore, we can conclude that the correlations between the personality questionnaires and helping behaviour indices do not account for any significant part of the variance. In other words, there are no significant correlations between scores obtained on these personality questionnaires and the helping behaviour indices.

Experiments III and VI

Only the first thirty male and thirty female students who participated in experiment III are included here. Forty male students participated in experiment VI. No significant correlations were once again found between scores obtained on the personality questionnaires and the various helping behaviour indices.

Family Variables

In experiment III, correlations were computed between the length of time spent sorting sheets for the experimenter and the following family variables: number of brothers, number of sisters, family size and ordinal position occupied in the family. These data are presented in table XVII.

Insert Table XVII about here

Table XVI

Chi-square values for the correlational
data.

Experiment I, (n = 30)

INDICES	CHI-SQUARE	P
Between personal- ity questionnaires	$X^2 = 51.86$ df = 28	P < .01
Between helping behaviour indices	$X^2 = 42.66$ df = 15	P < .001
Sum of the prece- ding chi-square	$X^2 = 94.52$ df = 43	P < .001
Overall chi-square	$X^2 = 106.05$ df = 91	N.S.

TABLE XVII

Correlations between the time spent sorting sheets and family variables.

SEX	MALES					FEMALES				
	Number of brothers	Number of sisters	Family size	Ordinal position	Number of brothers	Number of sisters	Family size	Ordinal position		
r^1	-	0.02	0.47	0.11	-	0.04	-0.22	-0.37		
r^2	0.72	-	-	-	-0.36	-	-	-		
p	<.01	N.S.	<.01	N.S.	<.05	N.S.	N.S.	<.05		
N	30	30	30	26	30	30	30	29		

1 - Product-moment correlation

2 - Point Biserial correlation

0 and 1 = 0
2 or more = 1

As this table shows, three of the four variables were significantly correlated with the length of time spent sorting sheets for the experimenter and the differences between sexes are quite interesting. For male subjects, the important variables appear to be the number of brothers ($r_b = + 0.72$) and the size of the family ($r = + 0.47$). Both of these variables are correlated positively with the time spent sorting sheets, that is, the bigger the family and the more brothers a male had, the more he helped. For female subjects, a reverse pattern was found; that is, the smaller the family (N.S.) and the fewer brothers ($r_b = -0.36$) a female had, the more she helped. In the case of females, what seems most important is their ordinal position in the family ($r = - 0.37$). The later a female was born into a family, the less likely she was to help. This factor was not significant for males.

In experiment VI, the correlations between the same family variables and the length of time spent sorting sheets were computed once again but this time none of the correlations were significant.

Thus it must be concluded that the correlational findings between family variables and the helping index obtained in experiment III are not reliable and were probably chance events.

Parental influences

According to Rettig (1956), one variable that proved to be related to altruism for students was the degree to which their parents had engaged in altruistic behaviour. When parents served as altruistic models, children were more inclined to be altruistic. Similarly, Rosenhan (1967) found that members of a group active in civil rights had a close relationship with at least one altruistic parent. Finally Rutherford and Mussen (1968) reported that generous boys were more likely to perceive their fathers, but not their mothers, as highly nurturant, and depicted themselves as being generous.

In experiment III, some information concerning these parental influences were collected. Table XVIII summarizes the data collected in the post-experimental questionnaire on two items dealing with how helpful the subjects thought their father and mother were.

Insert Table XVIII about here

It can be seen from this table that males indicated no difference between their mother and father in terms of how helpful they were toward others ($t_{42} = 0.91$, N.S.), whereas females indicated a large difference ($t_{41} = 2.87$, $P < 0.01$). According to females, their mother helped others significantly more than did their father. Other interesting computations in relation to Rettig's (1967) and Rutherford

TABLE XVIII

Experiment III

Subjects' ratings of how helpful their mother and their father were on a 7 point scale.

SEX	MALES		FEMALES	
	FATHER	MOTHER	FATHER	MOTHER
\bar{X}	5.50	5.81	5.04	6.13
S.D.	1.18	1.09	1.6	0.88
N	22	22	23	22
t	$t_{42} = 0.91$		$t_{43} = 2.87$	
p	N.S.		< .01	

and Mussen's (1968) findings would be the correlations between the length of time spent sorting sheets and the subjects' perception of the helpfulness of the mother and father. These correlations are presented in table XIX. (Experiment III).

Insert Table XIX about here

As can be seen from this table, the subjects' perception of the helpfulness of their father was not significantly correlated with the length of time spent sorting sheets for the experimenter. This holds true for both males and females. However, the subjects' perception of the helpfulness of their mother was significantly correlated with the length of time spent sorting sheets for the experimenter; the correlation is positive ($r = 0.34$, $P < .05$) for females and negative ($r = -0.38$, $P < .05$) for males, that is, females helped more if they perceived their mother as helpful while the reverse was true for males.

Similar correlations were computed in experiment VII. It was found as previously that males perceived their mother as more helpful than their father, but again not significantly so. Concerning the correlations between the subjects' perception of mother and father as helpful persons and the time they spent sorting sheets for the experimenter, both correlations were positive and non significant. It will

TABLE XIX

Experiment III

Correlations between time spent sorting sheets by subject and his perception of the helpfulness of his mother and father.

SEX	MALES		FEMALES	
	FATHER	MOTHER	FATHER	MOTHER
r^1	-0.25	-0.38	0.04	0.34
p	N.S.	<.05	N.S.	<.05
N	22	22	23	23

- 1- All correlations are corrected for the number of categories used by subjects in making their judgment.

be recalled that in experiment III both correlations were negative and one was significant! In view of the change in the direction of the correlations from one study to the next, it must be concluded once again that these correlational findings are not reliable and were probably chance events in experiment III.

Summary

Although a number of personality questionnaires and family variables have been assessed, no reliable significant correlations could be established between any of these variables and the behavioral measures of helping. This supports Kreb's (1970) conclusion:

"Considered as a whole, no general conclusion can be drawn about personality traits of benefactors (p.285)."

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