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# Influence of vicarious reinforcement on an observer's speed of conflict resolution

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INFLUENCE OF VICARIOUS REINFORCEMENT  
ON AN OBSERVER'S SPEED OF CONFLICT RESOLUTION

BY

NOLA RICE POWELL

A THESIS  
SUBMITTED TO THE GRADUATE FACULTY  
OF THE UNIVERSITY OF RICHMOND  
IN CANDIDACY  
FOR THE DEGREE OF  
MASTER OF ARTS IN PSYCHOLOGY

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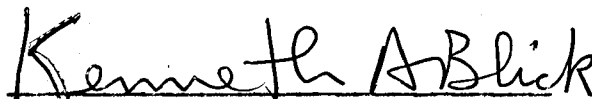
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ON AN OBSERVER'S SPEED OF CONFLICT RESOLUTION

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## Preface

The writer wishes to express sincere appreciation to Dr. James L. Tromater for his guidance, patience, and genuine interest throughout the course of this study. Also valued have been the helpful criticism and general supervision offered by Dr. Kenneth A. Blick and Dr. Edward H. Tiller. It was from their well-taught courses of instruction that the present thesis idea was developed.

Thanks should also be given to all of those professors who so faithfully searched out subjects for this experiment.

The assistance of the model, Mrs. Judy Kibler, has been gratefully appreciated. Without complaint, she gave willingly of her time to make this study possible.

Special appreciation is also due the writer's husband, Randy, whose untiring patience and understanding were most welcomed. And, her parents, Dr. and Mrs. Nolan E. Rice, should be recognized for their steadfast encouragement and support.

Finally, the writer wishes to acknowledge with gratitude the Richmond Juvenile Court who allowed her to pursue her graduate training for the last four years.

## Chapter I

### Introduction

Conflict, expressed parsimoniously yet meaningfully, results from "competition between incompatible responses" (Miller, 1944). Conflict identified in this manner must be distinguished from a psychoanalytic definition invoking internal dynamic states and forces as explanatory concepts. In the interest of working with behaviors that are more readily observable and measurable, this paper will focus on conflict as defined in the first sense.

Lewin (1931), in particular, was instrumental in launching a concept of conflict based on psychological field forces. Field forces, which were considered to be acquired, were said to have valences which had a point of application, strength, and direction. Valences could be positive in that they elicited approach responses, or negative in that they evoked avoidant or withdrawal behavior. Further, the organism's actions with respect to valences could be described as impulsive in nature, voluntary, " 'appropriate' " or " 'inappropriate' ".

The particular charge of a valence, however, was not considered to be static; in fact, Lewin (1935) also spoke of induced valences whose positive or negative charge is a



function of not only environmental factors but also psychological and social factors. As he so clearly stated:

Many objects in the environment, many modes of conduct, and many goals acquire a positive or a negative valence, ...not directly from the needs of the child himself, but through another person. More important, however, is the effect of example, that is, of that which the child sees characterized by the behavior of adults as positive or negative for them (p. 98).

Within this conceptual framework conflict, defined specifically as "the opposition of approximately equal strong field forces" (Lewin, 1931), has been divided into three types. Type I conflicts are those in which the organism would find himself between two positive valences, and the decision was not considered to be too difficult. In Type II conflicts, the organism would be confronted by a goal having both a positive and negative valence. His behavior would be marked by vacillation and indecision. Type III conflicts existed when the organism was caught between two negative valences neither of which he desired to choose and both of which he would like to avoid by going out of the field. Oscillation in behavior was typical of Type III conflict situations.

Hovland and Sears (1939) dubbed these conflict types as approach-approach (Type I), approach-avoidance (Type II), and avoidance-avoidance (Type III). They extended these types to include a fourth kind of conflict situation consisting of two Type II conflict situations simultaneously, i. e., the organism is drawn to two goals each of which has positive and negative valences. This Type IV conflict, dou-

ble approach-avoidance, has been a notable contribution in that it is probably most representative of conflicts encountered daily.

Using a motor conflict board, Hovland and Sears (1939) tested Lewin's assumptions that Type I conflicts would be easiest to resolve and Types II and III would be more difficult with more resolutions being classed as withdrawal from the field. The apparatus was designed so that four modes of resolution would be possible: single, double, compromise, and blocking (conceivably an instance of delayed reaction time and not considered to be a true mode of conflict resolution by the authors). The results confirmed Lewin's hypothesizing. The most common mode of conflict resolution for the Type I conflicts was the single response which occurred 57.50% of the time, for the Type II conflicts the double response at 46.88%, for the Type III conflicts the blocking response at 46.25%, and for the Type IV conflicts the blocking response at 72.50%.

From Lewin's initial theorizing and Hovland and Sears' additions, Miller (1944, 1959) derived basic testable postulates regarding conflict behavior. His efforts generated a sizable amount of experimentation, the majority of which has been accomplished in the animal laboratory and has dealt with the parameters of conflict resolution, the gradients of approach and avoidance, displacement, and generalization. Comparatively, there has been a paucity of comparable research into human conflict and conflict resolution (as

defined by this paper and as distinguished from decision-making, discrimination or psychophysical studies).

Sears and Hovland (1941) proposed that the relative strengths of competing responses might be a factor affecting the mode of conflict resolution as well as the kinds of responses (approach-approach, etc.) that are in conflict. They predicted that as the strengths of competing responses approached equality, there would be an increased frequency of blocking responses. In a two-part experiment using Type III conflicts, strength of response was defined by (a) the amount of practice and (b) the intensity of punishment. Four groups of subjects were given differing degrees of practice on each of two alternatives in ratios approaching equality of 1:20, 5:20, 20:20, 5:5. Three other groups of subjects either received shocks associated with both, neither, or only one of the alternatives. The initial hypothesis was confirmed for, as the number of (a) practice trials and (b) shocks associated with each alternative approached equality, frequency of blockage increased.

Barker (1946) presented college students with all possible combinations of 18 personal characteristics and environmental conditions. Subjects, who were divided into two groups, were presented with either all positive or all negative wording of the paired adjectives. They were then instructed to choose one of the two alternatives and also to indicate if their choice in a particular instance had been uncertain. For each subject, valences were assigned to ad-

jectives on the basis of the frequency with which the particular adjectives had been selected. Thus, for example, the most desirable condition was the one chosen most often and was given the highest valence. Results indicated that the frequency of uncertain choices increased as the difference between the valences of the alternatives decreased. Also, the frequency of uncertain choices was greater for negative than for positive alternatives.

Drawing upon the studies cited above, Arkoff (1957) studied the resolution of approach-approach (AP-AP) and avoidance-avoidance (AV-AV) conflicts in a verbal conflict situation. Selecting seven descriptive adjectives, he presented to his college-age subjects 42 conflicts, half AP-AP and half AV-AV. Following conflict resolution, his male and female subjects were requested to divide the cards into two piles of 21 cards each, with one pile representing the more difficult conflicts to resolve and the other being the easier conflicts to resolve. The results showed that the AV-AV conflicts required significantly more time to resolve than the AP-AP conflicts. AP-AP conflicts were also judged easier to resolve significantly more often than the AV-AV conflicts. There were no significant sex differences.

Minor, Miller, and Ditricks (1968) replicated Arkoff's study and also added an "undecided" alternative. They proposed that the "undecided" alternative would facilitate resolution of AV-AV conflicts because it would allow the subject to go out of the field; however, its effects on the AP-

AP conflicts would be negligible. Their findings were consistent with Arkoff's results although females manifested significantly shorter resolution times than the males for both types of conflict. The effects of the "undecided" alternative, while not significant, sharply decreased the mean resolution times of the AV-AV conflicts in comparison to Arkoff's data.

Edwards and Diers (1962) gave college subjects pairs of items from the Edwards Personal Preference Schedule (EPPS) along with modified instructions which allowed them to omit those items where the choice might be too difficult. Selected for study from the EPPS were 40 items generally believed to be socially desirable and 40 socially undesirable items. The rationale behind such a procedure was that items on the schedule high in social desirability would be comparable to AP-AP conflicts while the socially undesirable items would approximate the AV-AV conflict type. As predicted, socially undesirable items (AV-AV) led to a significantly greater number of no-choice responses than the socially desirable items (AP-AP).

Investigating the relationship between difficulty of conflicts and number of choice alternatives, Kiesler (1964, 1966) had children choose between (a) 2 or (b) 4 approximately equal alternatives or (c) 4 unequal alternatives composed of two attractive and 2 much less attractive items. The alternatives in this instance were candy bars chosen on the basis of a previous ranking of preferences. Recording reaction

time Kiesler found that the 2-equal alternative and 4-unequal alternative conditions presented greater conflict than the 4-equal alternative condition.

It is apparent from the foregoing studies that both the mode and speed of conflict resolution are functions of such variables as the (a) particular conflict type, (b) differential strengths of competing response predispositions, and (c) number and kind of alternatives available to the individual. It has also been stated by Lewin (1931, 1935) and more recently by Berlyne (1960) that a tendency to approach and/or avoid a certain environmental situation is an acquired behavior and thus conflict is a learned antagonism. These basic findings have generated more in-depth studies in which investigators have sought to identify the cognitive processes involved in conflict resolution in terms of how an individual actually goes about gathering information, comparing the alternatives, and reaching a decision (Festinger, 1964). There has been little research, however, into the problem of how an individual might acquire his particular manner of dealing with conflicts and how resistant to modification is his style of conflict resolution.

While each individual may have unique ways of coping with conflict and reaching a decision, there are also many features of his process of conflict resolution that he shares with others. Individuals can at times be characterized according to their approach to conflict as, for example, logical, irrational, evaluative, impulsive, rapid, slow, vacilla-

ting. It is conceivable that one way in which these behaviors are learned and modified is through the imitation of "significant others" in the environment. For young children, parents may be the dominant influence on behavior, while for older children and young adults, peers may serve as the major source of imitative behavior.

Before the specific hypotheses are outlined, it would appear essential to tie-down imitation to a specific theoretical framework which will afford a clearer, more precise understanding of this term as it is used here.

#### Imitation.

With their classic experiments on matched-dependent behavior, Miller and Dollard (1941) marked the genesis of the empirical investigation of imitation. Preconditions for imitation necessitated that an imitator (a) operate under a drive, (b) be able to perceive the cues produced by the model, (c) have the physical capacity and opportunity to respond, and (d) receive reward following the imitative behavior. They maintained that the cues provided by the behavior of the "leader" were probably more important than environmental cues since in the absence of the "leader", the dependent subject would be unable to make his response. Imitation was defined not by the observer matching the model's activities, behavior for behavior, but by "the similarity in the goal responses of the two performers" (p.133).

A more recent and certainly more comprehensive and promising theoretical formulation of imitation has been proposed

by Albert Bandura (1962, 1965a, 1965b, 1969a, 1969b), a major spokesman for the efficacy and economy of modeling techniques in the learning of new behaviors. Espousing a contiguity-mediational theory of observational learning, Bandura reasons that an observer comes under the discriminative stimuli of the model's behaviors. Behavioral cues provided by the model are then coded and stored by means of imaginal and verbal representational systems which, in turn, serve to mediate recall and reproduction of particular responses. Images are formed by the contiguous association and subsequent integration of modeling stimuli and the perceptual responses they elicit in the observer. Visual information of the model's behavior may be translated also into a verbal code, or symbols, which on later occasions serves to elicit previously observed behaviors of the models. Bandura quickly points out, however, that mere contiguity of sensory events, while necessary, is not a sufficient condition for acquisition of a model's responses. Attention to relevant modeling cues, accuracy of perception, previous discrimination training, and a variety of attention-directing variables affect the nature and degree of imitation. Also, the observer's ability to rehearse covertly and retain the coded systems is crucial as is his behavioral capacity for motor reproduction.

It is through modeling that learning can occur even though the observer has no opportunity to perform the behaviors he is witnessing. To Bandura, imitation may well be a case of "no-trial learning" because the observer (0)



does not respond overtly along with the model (M). Simple observation of M's behavior, however, does not insure that matching responses will be reproduced at a later date. An O's tendency to imitate the M's behavior is often strongly influenced by vicarious reinforcement, or the positive or negative consequences of the M's behavior. According to Bandura, vicarious reinforcement is a performance- rather than learning-related variable and has been described as having several possible functions (Bandura, 1965b, 1969a, 1969b; Flanders, 1968; Kanfer, 1965). (a) Information may be transmitted to the O regarding response-contingent reinforcements in similar situations. Depending on their consequences, different types of responses serve as discriminative stimuli for subsequent reward or punishment. Consequently, the O's performance of observed behaviors will be disinhibited or inhibited on the basis of what he perceives as acceptable or unacceptable behavior. (b) Vicarious reinforcement provides knowledge about the relevant and controlling environmental stimuli. Thus crucial environmental cues are made distinctive so that the O's imitative responses can occur in the presence of them and in the absence of the M. (c) Vicarious reinforcement may serve as an incentive in that observation of reinforcement can elicit anticipatory arousal thus enhancing the O's motivational level and augmenting imitative behavior. (d) Through observation of the M, emotional responses can be conditioned through repetitive contiguous association. (e) The M's sta-

tus can be differentially affected by the positive or negative consequences he receives since the O evaluates his social behavior in terms of the consequences delivered to the M.

Modeling may have a significant contribution to make to social learning theories which, having traditionally relied wholly on instrumental or operant conditioning procedures, are inadequate in their scope and completeness. Firstly, while operant techniques can control or strengthen previously learned responses, modeling procedures can adequately account for the acquisition of novel or relatively novel responses. Also, compared to shaping procedures, modeling facilitates and shortens the learning process, and it eliminates the time-consuming, costly, and sometimes extremely deleterious (even fatal) consequences of trial and error learning. Whole, complex response patterns can be acquired rapidly while errors are kept at a minimum. No doubt, modeling procedures can be considered to have a catalytic function (Patterson, 1969) in the sense that they accelerate the learning process yet remain independent of and unaffected by the outcome.

### Proposal

In view of the summarized findings on conflict resolution and the current status of modeling techniques, the present paper will focus specifically on the influence of vicarious reinforcement on an observer's speed of conflict resolution. Decision time, a very sensitive measure of con-

flict (Berlyne, 1960), has been selected as the dependent variable. This study can be fitted neatly into one of the two paradigms commonly used in modeling research (Patterson, 1969):

S <sub>1</sub>	S <sub>2</sub>	S <sub>3</sub>	R
Situation	Behavior of the model	A negative or positive consequence is attached to behavior	The observer responds

The experiment by Arkoff (1957) has served as a point of departure for the current investigation which has adhered to the preferred pretest-posttest control groups design (Flan- ders, 1968). Following a pretest of verbal conflict resolution, subjects were exposed to a M who was differentially reinforced for fast (RF) or slow (RS) conflict resolution or who received no reinforcement (NR) whatsoever. In the absence of the M each S then resolved verbal conflicts, AP-AP, AV-AV, and double approach-avoidance (DAP-AV), and decision time was recorded. Past findings have already suggested that AP-AP conflicts will be easier to resolve than AV-AV conflicts which will be less difficult than DAP-AV conflicts. In addition, if vicarious reinforcement, considered here as having both an informational and a reward value, is effective in modifying decision times, then the following results would be predicted:

Pretest:

1. Decision times for AP-AP, AV-AV, DAP-AV conflicts should increase with difficulty of the conflict type and differ significantly from each other.

**Posttest:**

1. The RF condition should have significantly shorter decision times than the RS and NR conditions.
2. The RS condition should have significantly longer decision times than the RF and NR conditions.
3. AP-AP, AV-AV, and DAP-AV decision times should differ significantly from each other since vicarious reinforcement should have its effects on speed of conflict resolution and not on the types of conflicts themselves.

**Pretest-posttest:**

1. There should be a significant positive correlation between pretest and posttest decision times.

## Chapter II

### Method

Subjects. Thirty female college students from introductory psychology and biology classes at the University of Richmond, Virginia served as Ss. Some had participated in previous experiments and thus all were not naive. They were randomly assigned to one of three experimental conditions of 10 Ss each.

Aiding E in this study was a female model, unknown to all Ss, who appeared to be college age.

Apparatus. Although the actual items differed in some instances, the type of conflict presentation employed by Arkoff (1957) was utilized and extended here with the addition of the DAP-AV conflict type. At the top of a 3 X 5 index card for each conflict was typed: "Which would you rather be?" The alternatives (AP-AP, AV-AV, DAP-AV) were printed below the question on the left and right sides of the cards. The prototype for the wording of each kind of conflict is presented below along with a sample conflict pair.

AP-AP: More honest  
than you are now.

More confident  
than you are now.

AV-AV: Less confident  
than you are now.

Less honest  
than you are now.

DAP-AV: More confident  
but less honest  
than you are now.

More honest  
but less confident  
than you are now.

The items selected for the conflicts were based on a prior ranking of 14 descriptive adjectives according to their desirability. Twenty-nine Ss, most of whom were female and none of whom served in the present study, were given this task. They ranked Arkoff's seven adjectives--wealthy, intelligent, talented, popular, healthy, well-adjusted, attractive--along with seven additional items--secure, patient, dependable, confident, honest, tolerant, sincere--that were randomly dispersed throughout the list. Selection of the particular adjectives for the conflicts was based upon a rationale similar to that employed by Edwards and Diers (1962). Pairing items high in personal desirability (determined by the computed median scores) was assumed to produce equally difficult conflict situations as was the pairing of items low in personal desirability.

Six items from the bottom half of the list (dependable, tolerant, patient, secure, talented, attractive) were chosen for the pretest. These adjectives were paired to make a total of 18 conflicts, 6 AP-AP, 6 AV-AV, 6 DAP-AV. Each adjective was used twice, once on either side of the card, for each conflict type and the order of conflict presentation was randomized for each S.

The top six items (well-adjusted, honest, sincere, intelligent, healthy, confident) were used in the posttest. Paired in all possible combinations, the six adjectives

yielded 15 different conflict pairings which were then cast in AP-AP, AV-AV, DAP-AV form to make a total of 45 conflict situations. Again each adjective appeared an equal number of times on each side of the card and the conflicts were presented in a random order for each S.

A stack of 45 blank cards, whose purpose will be discussed later, were also used as a dummy deck for the M.

Decision times were recorded to hundredths of a second by a Hunter KlockKounter, Model 120A, Series D. This apparatus was so constructed that noiseless timing began by pressing a button and was terminated by releasing the button. A separate reset button afforded a rapid return to the zero-point. The timing device was shielded from the S's view by a screen.

A plywood screen (Figure I) was so constructed that it (a) prevented the S from viewing the E's time recordings, (b) blocked the S's view of the timing apparatus and (c) cut-off the S's view of the signals relayed from the E to the M. The center portion of the screen had a small aperture two inches above the base and measuring 2 X 12 inches. This small window allowed (a) the E to signal the M by means of a small 6-inch flashlight and (b) the E to observe the S pick up the conflict card and place it in one of the two decision piles.

Procedure. The pretest, which was administered to all 30 Ss, provided a baseline, or pretreatment estimate, of decision times and was introduced in the following

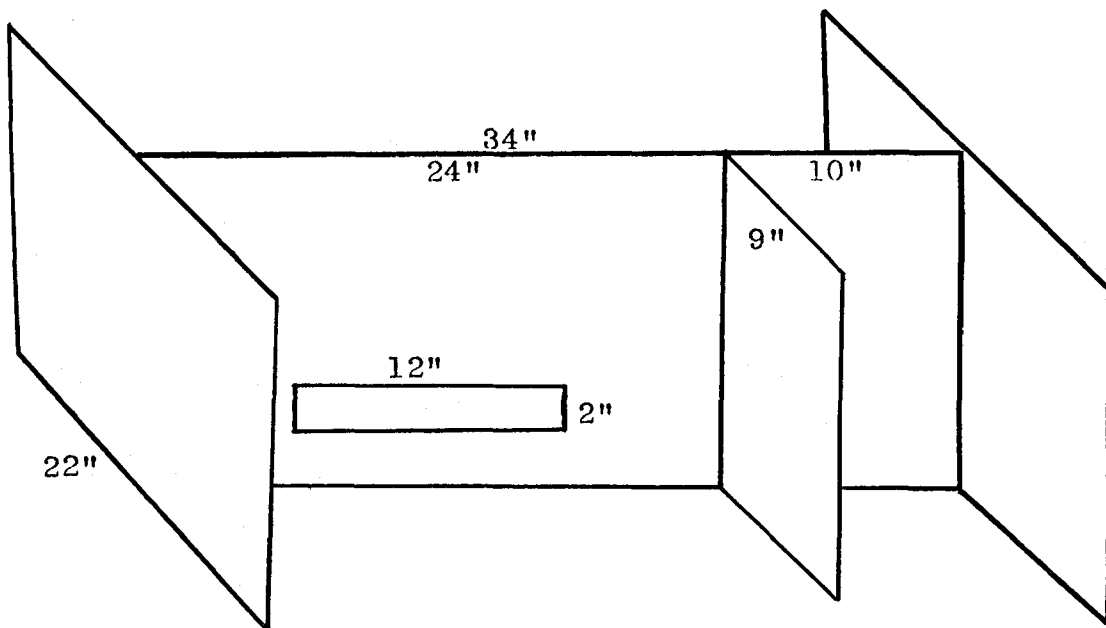


Figure I

Screen



manner. The E was waiting at the door of the experimental room as each S arrived and remarked: "My experiment has just been temporarily interrupted. The girl I had as a S had to leave to make an urgent telephone call..." E then spontaneously added: "Listen, since you are already here, would you like to go on and begin?" The S was directed to her seat on one side of the table and the E, taking her place on the other side, reached over the screen and commented, "Let me pick up her cards." She then removed the three stacks of cards (the dummy deck) from underneath the window on the S's side of the screen. The arrangement of these 45 cards, 10 in the center and an approximately equal number casually stacked on either side, were to give the impression of a suddenly interrupted session. A deck of 18 conflicts was then placed beneath the window in front of the S and she was read the following instructions, only slightly modified from Arkoff's original version:

I would like to introduce you to the kind of task you will be doing in a few minutes. Please listen to the instructions carefully since I can answer no questions once the experiment has begun.

Each card in front of you describes a conflict which you must resolve. When I give you the signal, "O.K.", turn up the topmost card and study the conflict presented. If your choice is the alternative on the left, place the card, face down, on the table to the left of the pile. If your choice is the alternative on the right, place the card, face down, on the table to the right of the pile. Following each conflict, wait for my signal to pick up the next card.

Imagine the conflict really confronts you. Be sure your choice is the one you would really make if you really had to decide.

Following the completion of the pretest, the E looked at the S and said:

Before we begin the main task, I have a favor to ask of you. The other girl who had to leave is probably back now from her telephone call. She has just about completed all of the main task-- in fact, she has only about 10 more conflicts left to resolve. I was wondering if you would mind if she finished her turn on the main task before you get started on it? You can sit right over there and watch until we are finished.

When making this last statement, the E pointed to a chair so positioned to give the S a side view of the M and E at work. As the S took her new seat, the E opened the door, looked out expectantly and remarked, "Here she is!" Returning to the table, the M sat down and the E replaced the three stacks of cards (with the 10 remaining conflicts to be resolved in the center pile) and inquired of M, "You remember what we were doing?" and the M nodded. To further enhance the reality of the situation and the spontaneity of M's responding, the E said "O.K." when the M was to pick up a card and used a small 6-inch flashlight as a signal to the M to place the card randomly in one of the two piles. The light was held at such an angle to prevent the S from noticing any flashes of light or reflections off the black screen. A stopwatch was used to deliver these light signals on a variable interval schedule around a mean of six seconds.

Subsequent to the M's resolution of the last conflict and without knowledge of the S's decision times on the pretest, the E exposed the S to one of three treatment conditions that were randomly ordered within each block of three.

One group of Ss observed E reinforce M for her fast responding (RF) with these words: "I notice that you have really solved these conflicts fast. That's very good!" The M replied with a "Thank-you" and the E added, "I'll have to ask you not to discuss this experiment with anyone." The M immediately rose without comment and exited from the room. Turning to the S, the E directed these words, "Now, it's your turn."

A second group heard the E reinforce the M for slower responding (RS): "I notice that you have really taken your time to seriously consider the alternatives. That's very good!" Again the M voiced a "Thank-you", and the dialogue from here on was repeated verbatim from the above condition.

The third, or control, group of Ss were exposed to the same M who received no differential reinforcement (NR) but only the instructions not to discuss the experiment and the directive, "Now, it's your turn."

Instructions for the posttest were essentially identical to the earlier instructions with only minor variation in the wording which indicated to the S that she had some "additional" conflicts to resolve. The deck of 45 conflicts was then placed in front of her.

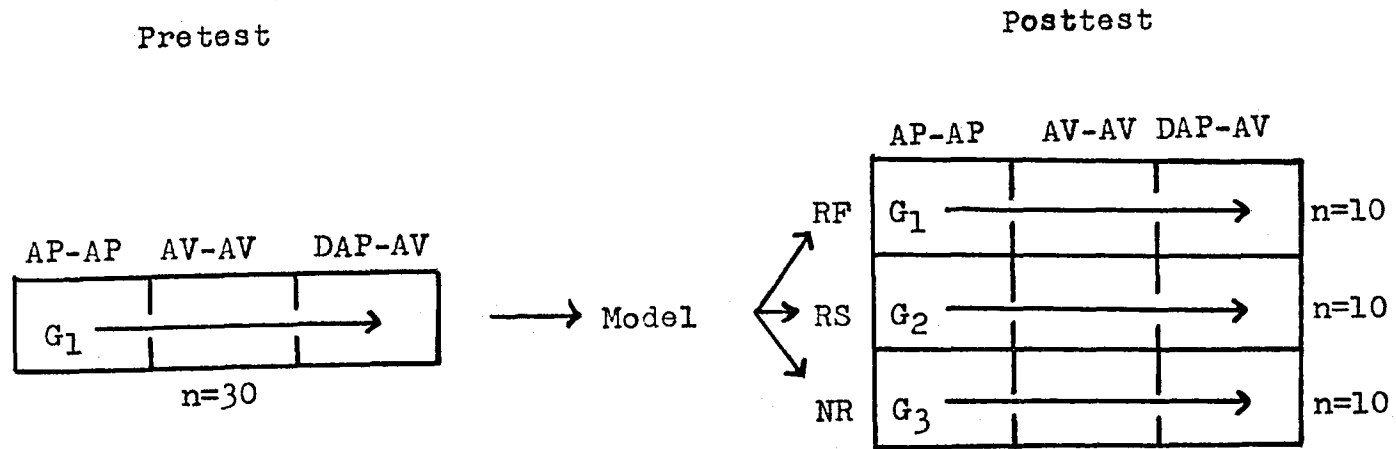
Thus, in the present study, the pretest served as the covariate and the posttest, a 3 X 3 factorial design with repeated measures on the conflict type, served as the criterion. The E exposed the Ss to one of three types of vicarious reinforcement, RF, RS, NR, following which they had

to resolve AP-AP, AV-AV, DAP-AV conflicts randomly distributed in a pack of cards. Table I is a schematic representation

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Insert Table I About Here  
-----

tation of the overall experimental design.

Table I  
Schematic Representation  
of Overall Experimental Design



## Chapter III

### Results

Pretest. A single factor analysis of variance for

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Insert Table II About Here  
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repeated measures yielded a significant treatment effect ( $F=10.83$ ,  $p<.01$ ). The Newman-Keuls test for differences

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Insert Table III About Here  
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among ordered means indicated that AP-AP conflicts were resolved more rapidly than either AV-AV or DAP-AV conflicts ( $p<.01$ ) but that the latter two conflict types did not differ significantly from each other as previously hypothesized.

Posttest. Data from the posttest were analyzed by means of an analysis of covariance for repeated measures in order to statistically control for variability due to S response differences. The main effects of the Vicarious Rein-

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Insert Table IV About Here  
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forcement (VR) factor ( $F=7.60$ ,  $p<.01$ ) and Conflict type ( $F=$

Table II  
 Analysis of Variance: Pretest Conflict Type

Source of variation	df	MS	F
<u>Between subjects</u>	<u>29</u>		
<u>Within subjects</u>	<u>60</u>		
Conflict	2	4581.92	10.83*
Residual	58	422.76	
*p<.01			$F_{.99}(2,58)=5.00$

Table III  
Newman-Keuls Test of Differences

<b>Pretest</b>			
	AP-AP	AV-AV	DAP-AV
Ordered means: (Conflict Type)	7.74	<u>10.66</u>	<u>11.72*</u>
<b>Posttest</b>			
	RF	NR	RS
Ordered means: (VR Type)	<u>6.79</u>	<u>8.29</u>	<u>9.85*</u>
	AP-AP	AV-AV	DAP-AV
Ordered means: (Conflict Type)	6.94	8.12	9.87 *

\*Means not underlined by a common line differ significantly at  $p < .01$ .



Table IV  
 Analysis of Covariance  
 Vicarious Reinforcement X Conflict Type

Source of variation	df	MS	F
<u>Between subjects</u>	<u>28</u>		
A' (VR)	2	18042.88	7.60*
Subj. w. A'	26	2375.19	
<u>Within subjects</u>	<u>59</u>		
B' (Conflict)	2	5983.12	19.73*
AB'	4	436.42	1.44
B X (subj. w. A')	53	303.21	

\*p < .01

$$F_{.99}(2, 26) = 5.53$$

$$F_{.99}(2, 53) = 5.05$$

19.73,  $p < .01$ ) were significant. A Newman-Keuls test (Table III) on the significant VR factor indicated that the RF and RS means differed significantly from each other at the .01 level of significance. Neither the RF nor RS conditions, however, differed significantly from the NR treatment group. A Newman-Keuls test (Table III) on the Conflict factor revealed, as expected, that AP-AP conflicts were resolved significantly faster ( $p < .01$ ) than AV-AV conflicts and that each of these conflict types were solved significantly faster ( $p < .01$ ) than DAP-AV conflicts. Figure II graphically depicts

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 Insert Figure II About Here  
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the three VR types and the average decision times for the three conflict types during the posttest. The predicted order or arrangement of the three kinds of vicarious reinforcement is clearly evident; however, as noted above, only the RF and RS conditions differed significantly from each other. The graph also shows distinct time differences between the AP-AP, AV-AV, DAP-AV conflict types under each condition of VR.

Pretest-posttest. A Pearson product-moment correlation coefficient was computed on S's total pretest and posttest scores. An  $r = .77$  was significant at  $p < .01$ .

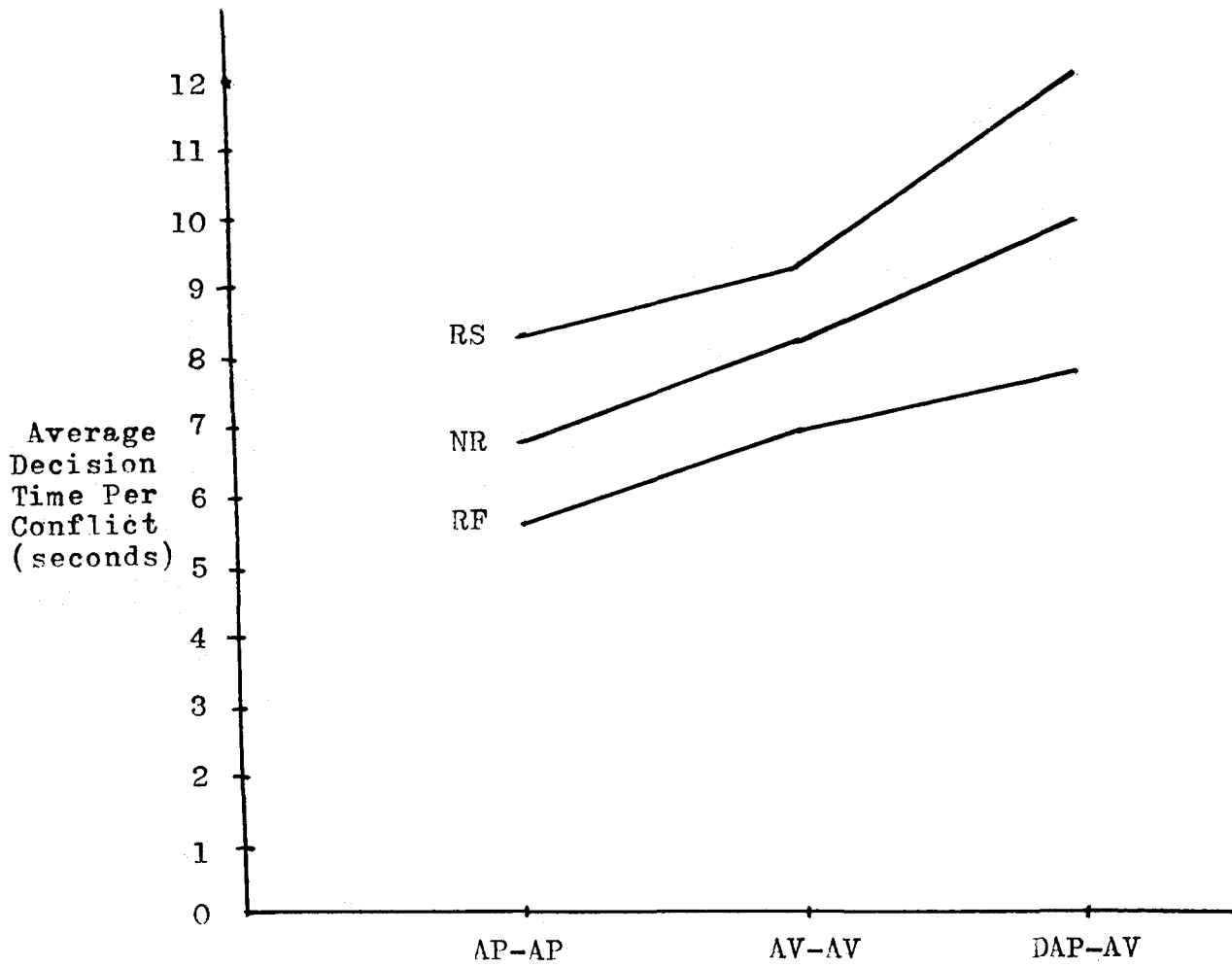


Figure II

Conflict Type and Vicarious Reinforcement

## Chapter IV

### Discussion

Previous findings in similar studies (Arkoff, 1957; Minor, Miller and Ditricks, 1968) that AP-AP conflicts are easier and therefore resolved more rapidly than AV-AV conflicts were confirmed again in both the pretest and the post-test phases of the present experiment. The DAP-AV conflict, constructed in a similar verbal style and not heretofore investigated, was found to require a significantly longer post-test decision time than either the AP-AP or AV-AV conflicts. On the pretest, DAP-AV conflicts did produce longer decision times than AP-AP and AV-AV items though the difference in the latter instance was not significant.

Research into conflict resolution has primarily focused on (a) the alternative chosen or (b) the process of or activities involved in conflict resolution. While the former variable lends itself readily to direct observation and measurement, the dimensions of the latter are somewhat more obscure and require further clarification. Many of the variables operating during conflict resolution are cognitive in nature and either not subject to direct measurement or at least limited to some crude form of measurement; others are more readily observable and objective such as decision time.

Psychologists are still plagued with the problem of defining just exactly what is going on during this time of mental debate and how the individual arrives at a final decision. Festinger (1964), cited earlier, has suggested that it is a period of information-gathering and evaluation, examination and re-interpretation of the available alternatives. These cognitive activities associated with conflict resolution, however, remain unspecified and tentative. Decision time, on the other hand, can give an indication of the time spent on these various cognitive exercises, whatever they may be, and at least affords a basis for comparison among individuals.

In line with this reasoning, the present study has demonstrated, as proposed, that these mental operations, however they may be defined, can be speeded up or slowed down when a model is differentially reinforced for rapid and deliberative responding, respectively. Vicarious reinforcement had a twofold function by serving as a source of both reward and information for the observer. Not only did the M receive positive reinforcement ("That's very good!"), but she was also given social approval for a specific kind of conflict resolution, i. e., fast or slow. Thus it was clearly demonstrated that Os' witnessing M reinforced for rapid responding tended to increase their speed of conflict resolution on the posttest and Os' having viewed the M rewarded for "seriously" considering the alternatives tended to deliberate longer over posttest items.

It might be mentioned at this point that a follow-up study is clearly indicated. While the present experiment has utilized positive reinforcements, no doubt, negative consequences are equally instrumental in the molding of an individual's mode and/or speed of conflict resolution. Thus, an observer's speed of conflict resolution may well be increased when the model is criticized for slow, time-consuming responding or lengthened when the model is reprimanded for hasty decision-making and foolish choices. In fact, it is often both positive and negative feedback, vicarious and direct, that influences an individual's style of resolving conflict.

As noted earlier, there has been a paucity of research into the question of how an individual might acquire his particular manner of dealing with conflicts and how resistant to modification is his style of conflict resolution. There are two practical generalizations that can be made from the present study with regard to these issues. First, although this study has dealt with adult subjects, it is likely that the modes of conflict resolution that children adopt and retain as part of their behavioral repertoires are learned from parents, peers, and other meaningful individuals in their lives as they grow older. The second implication from the present findings is an extension of the first in that maladaptive means of coping with conflict are likely alterable by manipulation of the consequences (i. e., reinforcements) of the selected style of conflict resolution.

(It might be noted that this explanation for the learning and unlearning of adaptive and maladaptive means of conflict resolution relies on no psychoanalytic or dynamic concepts.)

Consider, for example, the individual whose approach to conflict resolution has been broadly labelled as "impulsive". Festinger (1964) has suggested that when one only briefly considers the information available and quickly makes a decision, or when he bases his decision on some minute, minor detail, he may be attempting to escape a difficult conflict situation. Such impulsive decision-making, he contends, would likely be a function of the degree of importance of the decision, the closeness of the alternatives in terms of attractiveness, or a long, tedious process of gathering information. Lewin (1931) also noted that responding with respect to certain valences could be typed as impulsive. And through his keen observation (Lewin, 1935) he recognized, as quoted earlier in this paper, the crucial effect that "example" has on children's learning to attach positive or negative valences to certain behaviors. The findings of the present investigation would suggest then that impulsive conflict resolution may well be a function of previous learning from the mere observation of a model positively reinforced for rapid responding. This is not to say that subjects in the RF condition were responding impulsively during the posttest, but they did, in fact, respond more rapidly than the RS group.

Similar reasoning could also apply to individuals who,

seriously weighing the alternatives, tend to be more deliberative in their decision-making. While slower conflict resolution does not necessarily mean that the individual is being more evaluative, it is a condition necessary for more adequate handling of very difficult or important conflicts. Thus, while the RS group was not necessarily being more judgmental, they did take more time to resolve posttest conflicts than did the RF group.

Thus, even though there are likely many indices for impulsive or evaluative conflict resolution, a case can be made for using time spent making a choice. Bearing a close relationship, both quantitatively and qualitatively, to the actual mental operations occurring during this period, time spent has proven again to be a very useful measure of behavior.



## Chapter V

### Summary and Conclusions

The present study has sought to investigate the effect of vicarious reinforcement on the speed with which an individual resolves conflicts presented in verbal AP-AP, AV-AV, DAP-AV form. Following a pretest of 18 randomly ordered conflicts, thirty female subjects were exposed to a female model who was either reinforced for fast or slow responding, or who received no reinforcement whatsoever. It was hypothesized that the time spent resolving conflicts on a posttest, composed of 45 different, randomly arranged conflict pairings, would either increase, decrease, or remain unchanged. Relative to the three types of conflict, results agreed with the usual findings in which decision time lengthened with increased difficulty of conflict type. As predicted, vicarious reinforcement for fast and slow responding led to shorter and longer decision times, respectively, on the posttest though neither of these conditions differed from the non-reinforcement group. The efficacy of vicarious reinforcement in modifying the time spent resolving conflicts was discussed. Also explored was its practical utility in explaining how we might come to adapt certain styles of conflict resolu-

tion and how manipulable are these habits.

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## Vita

Nola Rice Powell, born on May 15, 1945, in Greensboro, North Carolina, was graduated from Douglas Freeman High School, Richmond, Virginia, in 1963. She attended Westhamton College of the University of Richmond, Virginia and was graduated with a Bachelor of Arts degree in Psychology in 1967. While attending the University of Richmond, she accepted membership in Psi Chi Honorary Psychology Club, Mortar Board, and Who's Who's. Following graduation she accepted a position with the Richmond Juvenile and Domestic Relations Court. In September of 1967, the Juvenile Court allowed her to enter graduate school in psychology at Virginia Commonwealth University where she remained one year. In the fall of 1968, she transferred to the University of Richmond, and later in the year, she married Randall W. Powell. In August of 1971 she expects to be awarded her Master of Arts degree in Psychology.