CONFORMITY IN COOPERATIVE AND COMPETITIVE GROUPS

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CONFORMITY IN COOPERATIVE AND COMPETITIVE GROUPS

By

Stanley A. Smith

AN ABSTRACT

Submitted to the College of Science and Arts
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in partial fulfillment of the requirements
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MASTER OF ARTS

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1961

Approved C F Wrigley

ABSTRACT

This investigation reports an experiment designed to find the effects of varying set, in terms of different degrees of competition and cooperation, upon conformity. In other words, under what conditions of competition and cooperation is conformity more strongly represented?

Three groups of subjects were tested on an aptitude-type test in which the experimental situation was designed to produce conformity. The three groups involved were a Cooperative, Competitive and Control Group A. A fourth group (Control Group B) took the test independently. This eliminated all possibility of conformity, and made known the objective level of clarity or ambiguity (difficulty) of the test items.

The major findings of this experiment are as follows:

1. The hypothesis has been supported that people in a Cooperative Group setting (i.e. working towards a common goal) will conform more than people in a Competitive Group setting (i.e. working for an individual goal).
2. People are generally competitive when placed in a group setting. Individuals in the Cooperative Group were also found to compete to some extent. Competition in the Cooperative Group was probably not directed at others, but towards some personal standard, e.g., doing well. Competition for Control Group A was evidenced by the fact that the means of the correct answers for both the Competitive Group and Control Group A were almost identical.
3. Individuals who knew an answer to a particular question gave it, while individuals who were not sure or did not know an answer to a particular question tended to go along with

the group answer. This tendency was found in all experimental situations (i.e., regardless of rewards, and group atmosphere).

4. When subjects did not know an answer to a question, there was a greater incentive to follow the group in the cooperative setting, and a lesser incentive to follow the group in the competitive setting.

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Dedication

To my beautiful and loving wife Carole, whose encouragement, patience and understanding have contributed much in seeing this endeavor through to its completion, this thesis is dedicated. Now Jodi can get to know her father.

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CHAPTER 1

INTRODUCTION

This investigation reports an experiment designed to find the effects upon conformity of varying subjects' set, in terms of different degrees of competition and cooperation. The aim is to find under what conditions of competition and cooperation, conformity is the more strongly represented.

Conformity is defined as the tendency of members of a group to shift in attitudes and behavior in the direction of the majority or modal or statistically most usual behavior.

Set is defined as the readiness to respond in a certain way, due to the individual's stimulation by a variety of external and internal factors e.g., motivation and attitude.

Cooperation is defined as work performed together for a group goal.

Competition is defined as behavior intended to show oneself superior to other group members.

Organization of the Thesis

The present chapter concerns itself with analyzing conformity in terms of stimulus ambiguity, group goals and motivational factors. The following chapter presents the factors affecting the display of competition and cooperation. Chapter 3 presents the methodology employed in the present investigation. The questioning method, apparatus, procedure and subjects are contained therein. Chapters

4 and 5 present the results and discussion, respectively, of this investigation. Finally, Chapter 6 summarizes the major findings.

Conformity phenomena demonstrate that groups exert pressure upon their members to conform to their practices and policies. The question that arises now is: Under what circumstances is conformity more likely to occur?

Cartwright and Zander (1960 p. 173) summarize the evidence by stating:

> . . . the tendency of a person to accept others' opinions is stronger where the following conditions are present. . . . (a) the quality of the evidence presented by others is convincing . . . (b) the quality of the evidence being judged is unclear or involves ambiguous distinctions; (c) the discrepancy between his own opinion and opinions of others is large (but not too large); (d) the confidence he has in the correctness of his own perception is low; and (e) he knows that others are aware that his opinions differ from theirs.

Deutsch and Gerard (1955) agree with Asch (1956) that conformity is more likely to occur when a person is required to state his views publicly rather than privately, when a member of a group rather than a non-member, and when he is not urged by others to hold on to his own beliefs.

Samelson (1956) demonstrated that subjects who were given the opportunity of explaining their cognitive conflict showed less conformity.

Jackson and Saltzstein (1958) state that conformity behavior is greater where group members are interdependently working toward a common goal, rather than a situation in which there is no common goal, or the task is not relevant to group achievement.

Kidd (1955) has shown that the more successful the members of the group in reaching a group goal, the greater will be the conformity.

Sherif (1936), Asch (1956) and Crutchfield (1955) pioneered in devising laboratory techniques for the measurement of conformity. Sherif (1936) showed how a subject's reports of the movement of a

pinpoint of light (actually stationary), could be altered by his hearing other subjects' judgments of the same autokinetic effect. Asch (1956) reports a series of experiments in which groups were given the task of comparing the lengths of successive sets of lines. All the members except one were instructed by the experimenter to respond erroneously. The single uninstructed member was then confronted by a situation in which all other members of the group were perceived to be in error. Two-thirds of the uninstructed subjects gave the correct response even though in a minority, and one-third of the subjects gave responses which corresponded with the erroneous reports of the unanimous majority. A main deficiency of Asch's procedure was the need for the experimenter and also his confederates to devote an hour or so to the testing of each subject.

Crutchfield (1955) devised equipment to dispense with the confederates, and to enable a set of five subjects to be exposed to group pressure simultaneously. The defect of his technique is the expense involved in building the electronic equipment.

Mathie[1] devised cheaper equipment, financially within the reach of almost any experimenter, which would serve the same function as Crutchfield's.

It is difficult to isolate all variables dependent upon conformity. The ambiguity of the stimuli, the motivations of the individual and the group task (e.g. group goals) are among the more important, and these will be considered in turn.

Deutsch and Gerard (1955) in studying conformity have distinguished between normative and informational social influences. A normative social influence may be defined as an influence to conform with the positive expectations of another. An informational social influence may

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[1]Unpublished study, 1959. The apparatus is described in Chapter 3.

be defined as an influence to accept information obtained from another as evidence about reality. Using normative and informational influence as a guide we can better understand the experiments that were conducted in conformity.

Sherif's (1936) study falls under the heading of informational influence. The subjects in this investigation were willing to accept the judgments of others as valid. The subjects were motivated to be accurate. The stimulus was highly ambiguous, namely, that of a pinpoint of light in a pitched black room. In other words, this was clearly an unstructured situation.

On the other hand, Asch's (1956) investigation falls under the heading of normative influence. Subjects were influenced to conform with the positive expectation of other group members. The stimuli were unambiguous, namely, lengths of pairs of lines. Subjects were motivated to be accepted by other subjects as well as the experimenter.

Conformity as evidenced from the work of Asch (1956) and Sherif (1936) can be produced under a variety of circumstances. Group goals and the motivations of an individual are among the more important related variables. With this in mind we can turn our attention to the motivations and group goals associated with cooperation and competition.

CHAPTER 2

FACTORS AFFECTING THE DISPLAY OF COMPETITION AND COOPERATION

What makes people cooperative or competitive is partly a function of individual personalities, partly a function of cultural expectencies, and partly a function of the social situation, with all three interrelated (Stendler, 1951).

Philp (1940) lists three interweaving factors that determine with whom people will as a rule compete or cooperate:

(a) The degree of likeness of the individuals concerned;

(b) Their knowledge of each others' skills;

(c) The general conditions under which competition and cooperation occur.

One of her major findings was that children are more quiet when competing or cooperating with strangers.

Greenberg (1932) suggests four factors affecting the display of competition in children:

(1) The degree of the child's understanding of the idea of excelling;

(2) The degree of the child's ability to dominate the material;

(3) The educational factors in the situation;

(4) The individual temperament as a competitive factor.

Deutsch (1949b) states that personal needs can function only if they are relevant to the objective situation. Competing behavior involves seeing the objective situation as relevant to the personal need to win or for prestige. Only personal activities, therefore, can be satisfactory (Lewis 1944).

Cooperative groups have been shown to be more highly task motivated than competitive groups (Deutsch, 1949b). The term "promotively interdependent" is used to describe the individual in the cooperative groups. His results indicate that these interdependent subjects were more highly motivated toward the assigned group task than the less promotively interdependent members of the competitive groups. It has been hypothesized that individuals will cooperate rather than compete when cooperation is perceived as a means toward achieving shared goals (Allport, Murphy and May, 1937).

Effects of Cooperative and Competitive Sets

Cooperative and competitive sets could have differential effects on both the extent to which group members will accept the judgments of older members as valid, and the motivation to comply with the expectations of others. The effects will tend to supplement each other in leading to greater conformity in cooperating than competing groups.

Effects on the perception of group members: In the Cooperative Group the goal is dependent upon the actions of others as well as himself. The instructions specify that effective coordination among all members is required for success. Since competence of others is required for success, then each group member in the cooperative setting is motivated (by induction) to achieve the group goal. Hence the member is likely, selectively to perceive the judgments of others during the course of the early task judgments and to come up with an impression of others as relatively competent and accurate. In the competitive situation, the subject is rewarded only if the others are not competent. Therefore, his need for success could lead to selective interpretation during the early judgments of others as less competent and accurate.

Effects on the motivation to comply: In the Cooperative Group a member knows that he will be accepted by others if he "helps," and rejected if he "hinders" the group. When all other group members answer in an identical fashion, the member may be hypothesized to be not only less certain of his own judgment, but also to face the likelihood of rejection if incorrect. If he conforms and is incorrect, on the other hand, he does not risk rejection. Thus, the Cooperative Group member, as contrasted with the Competitive Group member both is more strongly motivated for acceptance, and risks less through conforming.

Hypothesis

The hypothesis of the present study is accordingly as follows:

People in a cooperative group setting (i.e. where a common group goal is stressed) will conform more than people in a competitive group setting (i.e. where an individual goal is stressed).

CHAPTER 3

METHODOLOGY

The general scheme of the experiment was to try to change the subjects' set toward cooperativeness or competitiveness by varying the instructions, and then to find the effects of this in an aptitude test situation designed to induce and measure conformity behavior. The four experimental groups were:

1. The Cooperative Group. A group of 30 Ss, tested in subgroups of five, was told that the group with the highest percentage of correct answers in the test situation would win a prize. The intention was to induce a cooperative set in the Ss.

2. The Competitive Group. Another group of 30 Ss was told that the person with the highest percentage of correct answers would receive a prize, in the hope of inducing a competitive set.

3. Control Group A. This group of 30 Ss took the aptitude test under the same conformity conditions as the two preceding groups. However, no prize was offered to these Ss, i.e., no attempt was made to induce any particular set.

4. Control Group B. Each member of this group of 86 Ss answered the aptitude test items independently, i.e., without exposure to the conformity-producing situation, and with no possibility of being influenced in responses by others. The purpose of testing this group was to determine the level of objective clarity or ambiguity (difficulty) of the test items.

All Ss in the experiment were volunteer male students enrolled in psychology classes. By restricting Ss to males, it seemed that the

subgroups would be more homogeneous and sex differences in conformity would be eliminated. (For sex differences, see Beloff (1958), Crutchfield (1955), Mouton (1957), and Nakamura (1958).

Experimental Changes in Instructions

The oral instructions for the Cooperative Group included the following paragraph:

> It is important that you do well as a group. I am running other groups in this experiment that are similar to this one. The group with the highest percentage of correct answers will receive a prize. The prize will consist of $5.00, which will be divided equally among the members of the winning group. It is important to remember that this is an experiment in group dynamics, and therefore, the group as a whole must do well. It is not important how well each of you does as an individual. What is important once again is that as a group you do well.

The oral instructions for the Competitive Group included the following paragraph:

> It is important that each of you does your very best. I am running other groups in this experiment that are similar to this one. The individual with the highest percentage of correct answers will receive a prize. The prize will consist of $5.00. For this reason it is to your benefit to do as well as you can because one of you might receive the sum of $5.00 for your participation in this experiment.

Apparatus

The apparatus for inducing conformity was designed by Mathie.[1] It consists of five cubicles arranged on tables in a straight line.[2] One subject is instructed to sit in each cubicle. Before each subject is an answer sheet, and a pack of fifty numbered index cards, with a question and five answer choices, lettered A through E, on each card.

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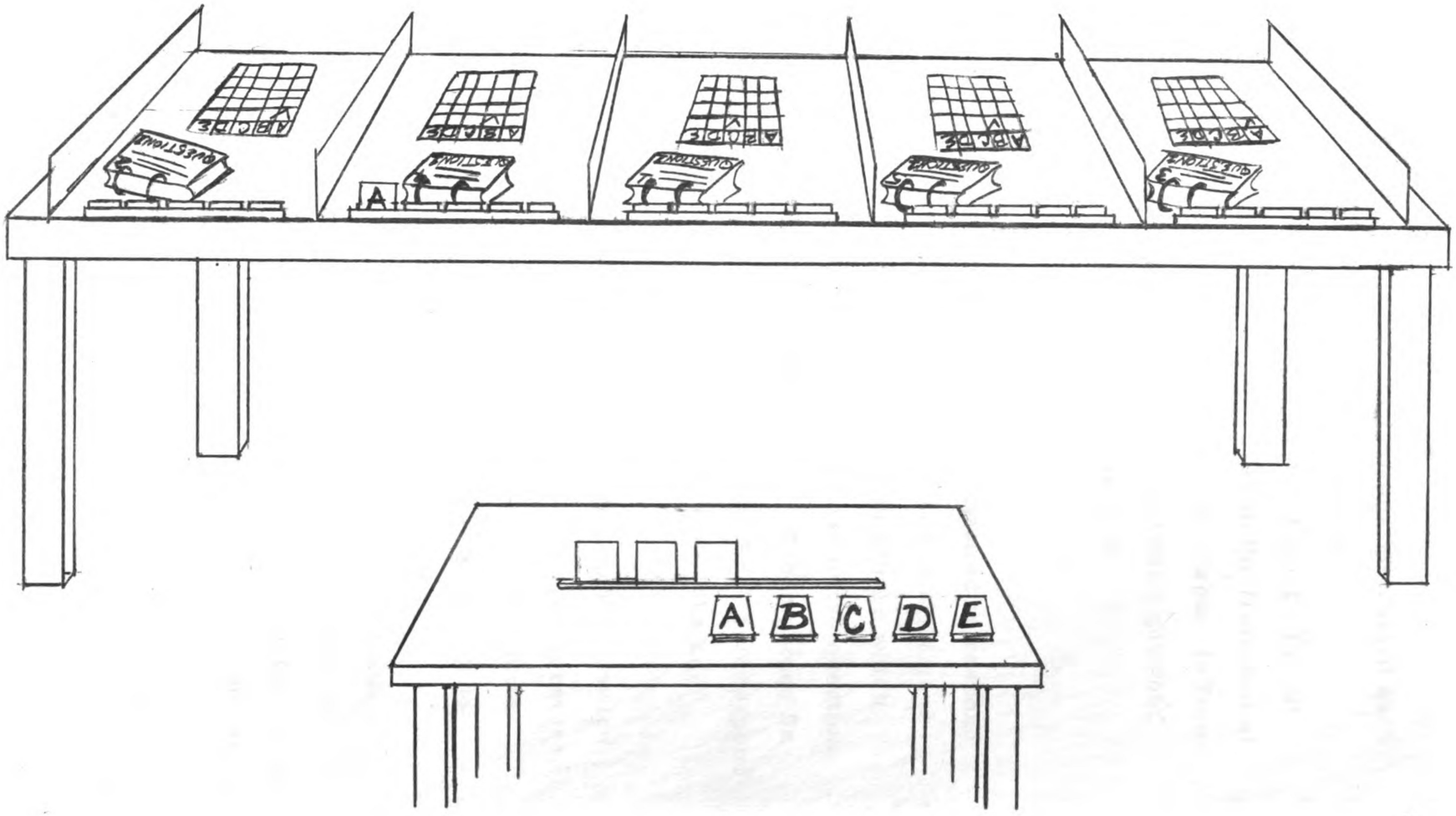
[1]James P. Mathie. Unpublished study, Michigan State University, 1959.

[2]Reference is made to Figure 1.

Figure 1. Apparatus



On each card a number in the upper right hand corner instructed each S upon the order in which he is to answer each question.

A series of plywood squares with the letters A through E, one letter being on each square, is connected by hinges to the front end of the cubicle, which faces the experimenter. On another table, in front of the experimenter, but facing the Ss is a rack, and twenty plywood lettered squares, viz., four for each letter A through E.

Procedure

The E announces, "Question one." The S designated to respond first for question one, i.e., the S with a "1" on the upper right hand corner on his index card, raises the plywood lettered square which corresponds with what in his opinion is the best answer to the question. This response can be seen by E but not by other Ss. E then places Ss response on his rack, where all Ss can see it, and the first S to respond quietly lowers his card, so that no one but he and E know who has answered.

When all Ss have answered the first question they are instructed to check their answer on the answer sheet in front of them. Therefore, S may have showed E one letter, but have recorded a different letter on his answer sheet. It is not important what letter S raises. What matters is the letter which S indicates on his answer sheet.

The remaining Ss see this Ss answer on the rack facing them, but they do not know who has answered. The S designated to answer second then raises a lettered sauare which in his opinion is the best answer to that question. The third, fourth and fifth S follow in similar manner.

In the instructions it has been stated that since no one follows the fifth S to answer, his response is not to be placed in the rack with the other four. No problems were found in connection with this

instruction. After the four Ss responded, and saw their responses placed in the rack facing them, E waited for the fifth S to answer, and then E cleared the rack, and said, "Question two."

Each S remained in his answering position for a few trials. For example: The S in number one position remained there for four questions, and then switched to number four position for a further six trials. This was done so that Ss would get used to being in the same position for a period of time. The first twenty-five questions were not relevant to the conformity results since each S was in a different answering position, namely one through five.

The conformity part of the experiment started with the 26th question. All Ss were now in the fifth or last answering position. By looking around indiscriminately, E put up four answers as before, but in this case there was no one answering in these positions. All four answers were identical (i.e. four A's, four B's, etc.), but were wrong.

The issue in these critical items was whether Ss would give what they considered to be the generally accepted answer, even though it was wrong.

Items twenty-seven through thirty-five and forty-one through fifty proceeded in a similar manner. Items thirty-six through forty were neutral items in which Ss once again returned to having various answering positions. For these twenty critical items, each S was faced with the situation in which all four other Ss appeared to have answered identically but erroneously. Conformity was measured by the extent to which each S accepted these psuedo-conformist responses.

CHAPTER 4

RESULTS

Mean conformity scores for the four groups are given in Table 1. The hypothesis that subjects with a cooperative set would conform more than those given a competitive set was confirmed. Mean conformity scores were 11.53 and 7.30 respectively. The difference is significant at the .01 level. Since the standard deviation for the Cooperative Group was only 4.76, it will be seen that means differ by nearly one SD, so that a test of significance was hardly needed. From Table 2 it will be seen that for every critical item the Cooperative Group conformed more than the competitive one.

Control Group A had been expected to conform less than the Competitive Group, but the mean difference of .10 was not significant, and indeed was in the opposite direction from that anticipated. Inclusion of the instructions "to do your very best" does not seem to have made any difference. In other words, the uninstructed S seems to approach the task with much the same attitude as the one specifically encouraged to be competitive.

A third comparison of interest is that between the two control groups. In Control Group B, with no pressure to conform, there was a mean score of 2.60 in the "conformity responses" to the 20 critical items. These represent guesses and random item responses, or items in which S believes the error response selected by other groups for conformity to be the right one. In Control Group A, the mean score is 7.40. This highly significant difference represents the effect of the conformity situation.

Table 1--Mean and Standard Deviation for the Critical Items

	Control Group A	Control Group B	Cooperative Group	Competitive Group
Mean	7.40	2.60	11.53	7.30
Standard Deviation	3.70	1.71	4.76	3.75

The t-values* are: 3.81 (Cooperative Group vs. Competitive Group);
3.72 (Cooperative Group vs. Control Group A);
0.10 (Competitive Group vs. Control Group A);
6.76 (Control Group A vs. Control Group B).

* A t-value of 2.58 is significant at .01 level.

Table 2 --Answers Given to All Items Broken Down into Their Respective Groups of Subjects

	Control Group A			Cooperative Group			Competitive Group			Control Group B		
	Forced	Correct	Other Alternatives	Forced	Correct	Other Alternatives	Forced	Correct	Other Alternatives	Forced	Correct	Other Alternatives
26	16	12	2	21	8	1	17	9	4	22	54	10
27	9	14	7	16	13	1	14	12	4	10	61	15
28	12	5	13	18	4	8	13	11	6	4	37	45
29	9	19	2	14	15	1	11	15	4	11	59	16
30	10	15	5	13	15	2	7	16	7	0	65	21
31	6	21	3	11	18	1	4	20	6	5	58	23
32	10	8	12	23	3	4	10	8	12	10	29	47
33	18	3	9	21	5	4	11	7	12	20	31	35
34	4	16	10	10	14	6	6	15	9	1	65	20
35	13	9	8	19	11	0	12	15	3	7	56	23
41	12	3	15	20	0	10	13	1	16	5	8	73
42	5	10	15	11	11	8	5	12	13	3	44	39
43	14	8	8	19	6	5	15	6	9	23	35	28
44	24	2	4	24	1	5	16	4	10	18	38	30
45	7	5	18	16	3	11	9	4	17	7	23	56
46	9	13	8	20	7	3	12	13	5	10	45	31
47	4	9	17	11	7	2	8	8	14	7	15	64
48	7	7	16	14	6	10	9	8	13	4	26	56
49	8	11	11	18	10	2	7	13	10	18	53	15
50	24	0	6	27	1	2	20	5	5	44	13	29

These results are corroborated by consideration of the correct responses. Table 3 gives means for correct answers for the 20 critical items. Control Group B, answering without pressure to conform, had a mean score of 9.47 correct responses. This score fell to 6.73 and 6.33 for the Competitive Group and Control Group A (a non-significant difference) and to 5.26 for the Cooperative Group. This decline in correctness of response is attributable to conformity pressure.

Answers given by Control Group B may be assumed to indicate the difficulty of the items under "neutral" conditions. In Table 4 the critical items are ranked in terms of difficulty.

Table 5 gives means for the ten easier and the ten harder questions. Since all t's were significant at the .01 level this confirmed the expectation that people who knew an answer gave it whereas those who did not know an answer went along with the group answer for all experimental groups. In other words, forcing was much more effective with the difficult items (as established by Control Group B) than with the easier items.[1]

Analysis of Results

1. The Cooperative Group provided slightly fewer correct answers than either the Competitive Group or Control Group A. The big difference seems to have been with the answers not known for in this instance there was a greater incentive to follow the group.

2. The Competitive Group showed less incentive to follow the group when the answers were not known.

3. Control Group A, like the Competitive Group showed no observable difference in regard to being influenced by the group. Evidently the addition of prize money made no difference. This reduced incentive

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[1]Reference is made to Table 4.

Table 3 --Means of Correct Answers of the Twenty Critical Items

Cooperative Group	5.26
Control Group A	6.33
Competitive Group	6.73
Control Group B	9.47

Table 4--Critical Items Ranked in Terms of Difficulty

Ranks	Item Number	Control Group B	Cooperative		Competitive		Control Group A	
			Forced	Correct	Forced	Correct	Forced	Correct
1.5	34	65	10	14	6	15	4	16
1.5	30	65	13	15	7	16	10	15
3	27	61	16	13	14	12	9	14
4	29	59	14	15	11	15	9	19
5	31	58	11	18	4	20	6	21
6	35	56	19	11	12	15	13	9
7	26	54	21	8	17	9	16	12
8	49	53	18	10	7	13	8	11
9	46	45	20	7	12	13	9	13
10	42	44	11	11	5	12	5	10
11	44	38	24	1	16	4	24	2
12	28	37	18	4	13	11	12	5
13	43	35	19	6	15	6	14	8
14	33	31	21	5	11	7	18	3
15	32	29	23	3	10	8	10	8
16	48	26	14	6	9	8	7	7
17	45	23	16	3	9	4	7	5
18	47	15	11	7	8	8	4	9
19	50	13	27	1	20	5	24	0
20	41	8	20	0	13	1	12	3

Table 5--Means for the Ten Easier and the Ten Harder Questions

	Mean of Easier 10 Questions	Mean of Harder 10 Questions	t Values*
Cooperative Group	4.06	1.20	5.54
Control Group A	4.66	1.66	5.82
Competitive Group	4.66	2.06	5.54
Control Group B	6.51	2.96	

*A t-value of 2.58 is significant at .01 level.

of the Competitive Group was more characteristic of subjects without set than the increased incentive of the Cooperative Group.

4. Control Group B answered more of the items correct than any other group, because they allowed themselves to be forced only 2.6 of the choices as compared with Control Group A, and the Cooperative Group who allowed themselves to be forced 7.4 and 11.53 respectively.

CHAPTER 5

DISCUSSION

The results demonstrate that people placed in a situation believed to encourage cooperation conform more than those who believe themselves to be in a competitive situation.

Since the mean of conformity for the Competitive Group was almost identical with that for Control Group A (where no prize was involved although the experimental situation was identical), two explanations are possible. One, is that people tend to compete with one another when placed in a group atmosphere, even when not specifically instructed to do so. Another explanation is that E did not induce a competitive set.

The first explanation appears more likely for the following reason. Competition may involve competing against others or competing against some personal standard (e.g. doing well). In other words, the Ss in Control Group A might not have actually competed against each other, but rather due to a personal standard tried to do as well as they possibly could. This would explain the fact that regardless of the experimental group an individual is in, if he knows an answer to a particular question he is likely to record it as such on his answer sheet. If he does not know the answer, then he will go along with the group answer.

It would seem logical for an individual in the Cooperative Group who knows a correct answer to record it than to follow his group in recording a wrong answer, which will obviously hinder rather than help the group. In other words, putting down a wrong answer will reduce the percentage of right answers. Yet, of the 30 subjects in the Cooperative Group hardly anyone seems to have approached the situation from such a logical point of view. These subjects could not give E an explanation

for their conforming, especially when conformity in this case (to an answer they knew was wrong) would hinder the group. By the same token, it can be said that if most people thought of this possibility, there might well have been no significant difference.

In the competitive situation if an individual does not know an answer, his taking the group answer which he believes four other individuals have agreed upon would not give any one individual an edge on that particular question. They would either all get it right, or all get it wrong. However, if an individual not sure of an answer dissented from the group answer he might be right, the group might be right or neither he nor the group might be right. Therefore, he has a greater incentive to gamble in this situation by selecting his own answer, which will place him at an advantage over his competitors if it happens to be the right one.

Since the mean of correct answers for the Cooperative Group was quite close to the mean of either the Competitive Group or Control Group A (no prize involved), it is reasonable to conclude that subjects who knew an answer gave it, rather than succumbed to the group answer they knew was wrong. That is to say, subjects in the Cooperative Group were competing with each other to a certain degree. Since the mean for the correct answers for the Competitive Group and Control Group A were similar (M = 6.73 and M = 6.33 respectively), these two groups both adapted a relatively competitive set. In other words, when placed in a group situation individuals tend to try to do well. This analogy also holds true for the Cooperative Group, but to a lesser degree, since the mean of 5.26 is not as close to the mean of 6.73 as the mean of 6.33 is for Control Group A.

This point of view was also presented by Coleman, et al., (1958), and many other researchers. Their contention is that an individual will be better able to resist conformity pressure from the group if he is certain of the correct answer. External information (looking at other

people's answers) will become important only when the individual is unfamiliar with the correct answer. If an individual is certain of the correct answer, he will be better able to respond in terms of internal cues (aptitudes, motivations, etc.) rather than rely on external information such as copying someone elses answer in the face of uncertainty.

During the course of the experiment it was disclosed to E that sometimes people knew the right answer to a particular question, but nevertheless, went along with the group answer even though they knew the group was wrong. This phenomenon occurred in all groups except Control Group B who took the test independently. This is one explanation why Control Group B answered correctly more of the critical items than the other three groups. The Ss in Control Group B were comparable to the Ss in the other groups, so this would discount the fact that Ss in Control Group B were of a different population.

This finding seems to contradict an earlier assertion that correct answers will be recorded correctly in any group. However, the finding that when S knew an answer he gave it, and when S did not know the answer he tended to follow the group answer is supported by the results. Therefore, the verbal reports of Ss must not be taken as a fact that can be statistically verified. In other words, what Ss said they did was not corroborated with the results of what they actually did.

A discussion of the time element involved in the testing situation is now in order. Control Group B handed their papers in when they were finished. No time limit was enforced. Most Ss in this group took the test home and handed it to E the following day.

Control Group A, the Cooperative Group and the Competitive Group also had ample time, with no limit enforced, for taking the test in the experimental situation. For the first 25 items the Ss in these three groups answered the items at their own speed. For the remaining critical items E used as a guide the time it took for that particular group

to answer questions 1 through 25. For example: If a given group took half an hour to answer questions 1 through 25, E allowed at least another half hour to answer the remaining 25 questions. Indeed, since the remaining 25 questions were more difficult, E usually allowed an extra ten to fifteen minutes beyond that. Upon questioning the Ss after the experiment, hardly anyone reported having been rushed. The average time for a group of five Ss taking the test in the experimental situation was an hour and fifteen minutes, with a range from fifty minutes to an hour and a half.

Limitations of the Study

The statistical testing indicates that the results can be generalized to other comparable groups with relatively small risk. However, the results can not be generalized to non-comparable groups. Another limitation of the study involves the stimulus material. The degree of ambiguity of the test items must be considered in regard to generalization. Different questions involving different degrees of ambiguity might give an investigator quite different results.

CHAPTER 6

SUMMARY AND CONCLUSIONS

Three groups of 30 subjects each were tested on an aptitude-like test in an experimental situation intended to produce conformity behavior. It was assumed that a person's set could be changed by varying the instructions by so doing inducing in the subject a spirit of either co-operativeness or competitiveness. The three experimental groups were therefore (a) the Cooperative Group, (b) the Competitive Group, and (c) Control Group A (tested in the conformity situation with no specific set induced). A fourth group Control Group B, consisted of 86 subjects.

The major findings of the thesis are as follows:

1. The hypothesis has been supported that people in a Cooperative Group setting (i.e. working towards a common goal) will conform more than people in a Competitive Group setting (i.e. working for an individual goal).

2. People are generally competitive when placed in a group setting. It was found that individuals in the Cooperative Group were competing to some extent. Competition for the Cooperative Group was probably not directed to others, but directed to a personal standard, e.g., doing well. Competition for Control Group A was evidenced by the fact that the means of the correct answers for both the Competitive Group and Control Group A were almost identical.

3. Individuals who knew an answer to a particular question gave it, while individuals who were not sure or did not know an answer to a particular question went along with the group answer. This was true regardless of the experimental situation the individual was in (i.e., regardless of rewards, instructions and group atmosphere).

4. When Ss did not know an answer to a question there was a greater incentive to follow the group in the cooperative setting, and a lesser incentive to follow the group in the competitive setting.

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APPENDICES

APPENDIX A

Instructions

This is an experiment in group dynamics. Each of you has a set of 50 index cards, each card having one question and five possible answers. The possible answers are lettered A through E.

I will first read out the number of the question. The question number is found at the bottom of the index card.

In the upper right hand corner you will find a number indicating the order in which you are to answer that particular question.

At the front of your box you will find the letters A through E to correspond with the possible answers.

After I have read the question number, the person with the number one in the upper right hand corner of his index card will quietly lift the letter in front of him which corresponds to the letter of his answer. This is done to show me what his answer is. I will then put his answer up in this rack. After I have put his answer in the rack he will quietly lower his letter. Then the person with number two will answer and I will put his answer in the rack. Then number three, four and five will respond in the same manner. Since there is no one more to answer after the fifth person, I will not place his answer on the rack.

You must be very quiet when you raise and lower your letter so that no one will know who has answered. You will know the answers of those who answered before you, but will not know who gave the answer. Similarly, others will know what you answered but will not know that it was you who gave the answer.

After all five people have answered I will clear this rack. At this time you will record your answer on the answer sheet in front of you by placing an X after the letter corresponding to your answer.

Please do not try to discover who is giving which answer and please do not talk during the experiment. Your answers will be kept strictly confidential. No one will see your answer sheets.

If a question arises during the experiment, please raise your hand and I will come to you.

Do not mark up or do any figuring on the question cards.

* It is important that you do well as a group. I am running other groups in this experiment that are similar to this one. The group with the highest percentage of correct answers will receive a prize. The prize will consist of $5.00, which will be divided equally among the members of the winning group. It is important to remember that this is an experiment in group dynamics, and, therefore, the group as a whole must do well. It is not important how well each of you does as an individual. What is important once again is that as a group you do well.

Are there any questions?

The only change of instructions for the Competitive Group is found in the last paragraph, marked by an asterisk. All other instructions remain identical.

* It is important that each of you does your very best. I am running other groups in this experiment that are similar to this one. The individual with the highest percentage of correct answers will receive a prize. The prize will consist of $5.00. For this reason it is to your benefit to do as well as you can because one of you might receive the sum of $5.00 for your participation in this experiment.

Are there any questions?

The instructions for Control Group A were identical to the instructions for the Cooperative and the Competitive Groups except for the last paragraph. Neither paragraph as marked by an asterisk was included in the instructions for Control Group A, since no prize was involved for

this group. The last few sentences of instruction for Control Group A are as follows:

Please do not try to discover who is giving which answer and please do not talk during the experiment. Your answers will be kept strictly confidential. No one will see your answer sheets. If a question arises during the experiment, please raise your hand and I will come to you. Do not mark up or do any figuring on the question cards. Are there any questions?

No formalized set of instructions was given to Control Group B. Subjects were instructed to answer the questions given to them on mimeographed sheets as best they could. They were told that the questions were previously used in an experiment, and it was their task to answer them truthfully and independently, so that a level of difficulty could be ascertained from their answers to the questions.

APPENDIX B

Table 6--Answering Positions of Subjects

	Question Numbers									
	1-5	6-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50
1	5	3	3	1	1	5	5	4	5	5
2	3	5	2	2	2	5	5	5	5	5
Subjects 3	2	2	5	4	4	5	5	2	5	5
4	4	4	4	5	3	5	5	1	5	5
5	1	1	1	3	5	5	5	3	5	5

Table 6 shows the number of times each of the five subjects remained in their respective answering positions. The question numbers are found at the top of the table. The numbers 1 through 5 representing the five subjects are found at the left of the table. For questions 26 through 35, and questions 41 through 50 all subjects were in the fifth or last answering position. All other positions were distributed randomly.

APPENDIX C

Table 7 -- Frequency Distribution of Individual Scores for the Forced Critical Items

	Competitive Group	Cooperative Group	Control Group A	Control Group B
20	0	1	0	0
19	0	3	0	0
18	0	0	0	0
17	0	1	0	0
16	1	1	1	0
15	0	1	1	0
14	0	2	1	0
13	2	4	0	0
12	0	1	0	0
11	4	4	2	0
10	2	4	4	0
9	2	1	2	0
8	2	1	3	0
7	4	1	4	0
6	5	1	0	5
5	1	2	3	17
4	2	1	6	11
3	1	0	1	24
2	2	0	1	18
1	1	1	1	12
0	1	0	0	9
	N = 30	N = 30	N = 30	N = 86

APPENDIX D

1. 2 is to 4 as 4 is to
   (A) 8 (B) 10 (C) 12 (D) 4 (E) 5

2. Cub is to bear as calf is to
   (A) leg (B) horse (C) cow (D) panda (E) deer

3. Tall is to short as die is to
   (A) dye (B) cast (C) live (D) expire (E) grow

4. Leaf is to tree as hand is to
   (A) body (B) foot (C) handy (D) finger (E) give

5. Core is to Corps as sent is to
   (A) send (B) cent (C) sent (D) transmitted (E) sents

6. Book is to read as radio is to
   (A) Television (B) See (C) Listen (D) Marconi (E) Music

7. 1-3-5-7 is to 11-13-15-17 as 2-4-6-8 is to
   (A) 12-13-14-15 (B) 10-12-14-16 (C) 8-6-4-2 (D) infinity (E) 12-10-9-7

8. Cow is to cows as deer is to
   (A) deer (B) deers (C) deeres (D) bucks (E) herd

9. 1760 yards is to one mile as 220 yards is to one
   (A) quadrant (B) kilometer (C) fathom (D) furlong (E) octroi

10. Five is to 4 as two is to
    (A) 6 (B) 8 (C) 4 (D) 3 (E) 7

11. Past is to "ed" as present is to
    (A) "ing" (B) "tion" (C) "ex" (D) "gh" (E) future

12. Tibia is to Fibula as Radius is to
    (A) Ulna (B) Femur (C) Ischium (D) Ilium (E) Tarsus

13. Quarter is to football as Chukker is to
    (A) LaCrosse (B) Soccer (C) Rugby (D) Cricket (E) Polo

14. One yard is to 36 inches as one fathom is to
    (A) 220 yards (B) one cubic rod (C) 16 feet (D) 6 feet (E) 100 centimeters

15. Horse is to sheep as mare is to
    (A) lamb (B) ewe (C) stallion (D) horse (E) sheep

16. Before is to Obstetrician as after is to
(A) Pediatrician (B) Gynecologist (C) Osteopath (D) Ophthalmologist
(E) Orthodontist

17. 96 and 36 are to 12 as 84 and 7 are to
(A) 2 (B) 6 (C) 3 (D) 7 (E) 8

18. A robin is to a wren as a minnow is to a
(A) Porpoise (B) Whale (C) Duckbill Platypus (D) Seal (E) Trout

19. Flammable is to nonflammable as inflammable is to
(A) fire (B) inoperative (C) nonflammable (D) incorrect (E) flammable

20. 81 is to 9 is to 3 as 256 is to 16 is to
(A) 8 (B) 4 (C) 2 (D) 6 (E) no answer

21. Short is to longest as meek is to
(A) mild (B) gentle (C) submissive (D) kind (E) modest

22. Presley is to Rock and Roll as Goodman is to
(A) Swing (B) Dixieland (C) Classical (D) Bop (E) Jazz

23. Anode is to cathode as yes is to
(A) certainly (B) doing (C) completed (D) stop (E) no

24. Homo is to Latin as Anthropos is to
(A) Spanish (B) Latin (C) Greek (D) German (E) Italian

25. HCl is to Hydrochloric acid as H_2SO_4 is to
(A) Sulphuric acid (B) Hydrogen peroxide (C) Ether (D) Fire (E) Ammonia

26. Washington D.C. is to the United States as Ankara is to
(A) Chile (B) Iran (C) Turkey (D) Russia (E) Greenland*

27. A is to Z as alpha is to
(A) epsilon (B) omicron (C) chi (D) pi * (E) omega

28. Mark Twain is to Samuel Clemens as Saki is to
(A) George Sands * (B) Ernest Hemingway (C) Joseph Conrad
(D) Andre Malreaux (E) H. H. Munro

29. One meter is to 39.37 inches as one inch is to _____ centimeter(s)
(A) 1 (B) 5.24 (C) 4.52 (D) 10 * (E) 2.54

30. Distance in walking is to pedometer as density of milk is to
(A) anemometer * (B) manometer (C) drosometer (D) dosimeter
(E) lactometer

31. Tack is to _ ._ _.. _._ as cat is to
(A) ._._ _. _ (B) _._ ._ ._ (C) _._ _. _. *
(D) _._. ._ _ (E) ._ _._. _._

32. Conceit is to egotism as Nationalism is to
(A) Solecism (B) Synchronism (C) Aphorism * (D) Chauvinism
(E) Atavism

33. 9-12-4 is to 25-30-6 as 9-6-18 is to
(A) 25-20-100 (B) 9-5-20 (C) 25-22-66 (D) 18-12-36 * (E) 6-3-15

34. Geologist is to rock as Ornithologist is to
(A) Religion (B) Decoration (C) Bird (D) Star (E) Water *

35. Pork Chop is to hill as Mannerheim is to
(A) Line (B) Hill * (C) War (D) Canada (E) Win

36. Pride is to Prejudice as Sense is to
(A) Sensibility (B) Action (C) Knowledge (D) Ignorance (E) Hate

37. Dunn is to Bradstreet as Merrill, Lynch, Pierce, Fenner is to
(A) Smith (B) Clark (C) Jones (D) Fox (E) Balser

38. 6 a.m. is to 6 p.m. as betimes is to
(A) anon (B) vespertinal (C) matutinal (D) laconic (E) now

39. 2 is to 4-2-4-2 as 3 is to
(A) 9-3-6-3 (B) 6-3-9-3 (C) 3-9-6-3 (D) 6-3-3-9 (E) 3-6-6-3

40. Abraham Lincoln is to the "Railsplitter" as Martin Van Buren is to
(A) The Kinderhook Fox (B) Old Man Eloquent (C) Squire of Hyde Park
(D) Old Tip (E) Old Rough and Ready

41. "Aida" is to "Sylvia" as "Burleske" is to
(A) "Coppelia" (B) "Carnaval" (C) "Samson et Delila"
(D) "Sinfonietta Giocosa" (E) "Idomeneo" *

42. 5-7-9-2 is to 7-8-9-1 as 2-5-8-3 is to
(A) 2-6-8-4 (B) 1-2-4-1 (C) 1-5-9-4 (D) 3-6-9-2 (E) 2-2-4-8 *

43. The Atlantic is to the Pacific as New Guinea is to
(A) Cyprus (B) Corsica (C) Cuba * (D) Greenland (E) Borneo

44. Jocose is to melancholy as evergreen is to
(A) carnivorous (B) perennial (C) deciduous (D) herbivorous (E) tree *

45. ABC is to 2 as JKL is to
(A) 5 (B) 4 (C) 6 * (D) 3 (E) none of the above

46. s-b-l-i-b-r-q is to tangent as a-f-j-v is to
(A) can't (B) belt (C) face (D) bomb * (E) bask

47. 2-7-4-5-6-3 is to 3-6-5-4-7-2 as 4-7-6-3-8-1 is to
(A) 3-6-5-8-1-4 (B) 1-3-6-5-7-6 (C) 4-7-6-3-8-1 (D) 3-1-5-7-2-2 *
(E) 2-3-4-5-6-4

48. Jack of clubs is to 8 of diamonds as 7 of spades is to
(A) 4 of diamonds (B) 4 of spades * (C) 2 of clubs (D) ace of clubs
(E) 8 of hearts

49. Appetizer is to after dinner drink as antipasto is to
(A) Hors D'Oeuvres * (B) Souffle (C) Demitasse (D) Suzette (E) Croutons

50. 6-9-5-7-2 is to 6-11-9-13-10 as 4-7-8-2-6 is to
(A) 4-6-8-3-5 (B) 5-8-9-3-7 (C) unsolvable * (D) 4-1-7-4-3
(E) 4-0-6-5-2

Legend: Underlined is the correct answer.
* is the forced answer for the twenty critical items.

APPENDIX E

A	B	C	D	E	A	B	C	D	E
1					26				
2					27				
3					28				
4					29				
5					30				
6					31				
7					32				
8					33				
9					34				
10					35				
11					36				
12					37				
13					38				
14					39				
15					40				
16					41				
17					42				
18					43				
19					44				
20					45				
21					46				
22					47				
23					48				
24					49				
25					50