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THE EFFECT OF GROUP PRESSURES ON OPINION, PERCEPTION, AND COMMUNICATION

by

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THE EFFECT OF GROUP PRESSURES ON OPINION, PERCEPTION AND COMMUNICATION

by Bertram Herbert Raven

This is a study of group pressures toward uniformity as they affect opinions, communications, and perceptions of the deviate. It was designed to examine a situation in which pressure toward uniformity manifests itself specifically in pressure on the deviate to change toward the group norm.

Groups of subjects read a delinquency case and privately indicated their opinions of the delinquent on a "favorable-unfavorable" scale. In experimental groups, a false consensus, reported to the subject, indicated that those holding "unfavorable" opinions were deviant from a well-defined group norm. The subjects were given several opportunities to change their opinions. In preparation for a group discussion and unified group report of the case, they wrote individual descriptions of the study. In some groups, the individual descriptions were to be communicated to all other members of the group; in others, the descriptions were to remain completely private. In some groups, there was possibility of being rejected from the group by closed ballot, in others not.

As predicted, deviates were more likely to change their opinions than those subjects at the group norm. Deviates in experimental groups changed toward the norm more than did subjects with comparable opinions in control groups, where no consensus was presented. Deviates were also more likely to change if their descriptions were to be communicated to others in the group, and, less significantly, if they could be rejected for deviance. In addition, it was found that the extreme deviates held their opinions with greater intensity — were less likely to change toward the norm.

The individual descriptions which were to be made public offered a measure of distortion in communicated content relevant to the opinion. In contrast, private descriptions offered a measure of distortion in perceived content. The content items were each rated in terms of whether they supported the deviant opinion or the normative position presumably taken by the group. It was predicted that there would be greater selection and distortion of content toward the norm in communication than in perception — the content at the communicated level would itself be a secondary distortion of content at the cognitive level. It was also predicted that there would be more distortion toward the norm when there was possibility of rejection.

These content-related predictions were not supported by data from deviates, who, from other evidence, seemed to hold their original opinions with great intensity. These deviates attempted to achieve uniformity by influencing others, rather than by changing their own opinions. However, with a separate consideration of subjects who were presumed to be less involved in their initial opinions, every difference was in the predicted direction, though the small number of cases often precluded high significance.

An additional finding showed significantly that changes in opinion effectively decrease the discrepancy between initial opinion and the content of the individual description. On the basis of this and other evidence, a theory of opinion change was suggested: pressure to change may operate first on content communicated and perceived; the opinion would then change to correspond to this distorted perception of content.

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TABLE OF CONTENTS

		Page
LIST OF TABLES AND FIGURES		iv
CHAPTER		
I.	INTRODUCTION AND THEORY	1
	Prior Research	1
	Development of Present Theory	5
	Focus of this study	15
II.	EXPERIMENTAL METHOD	19
	General Experimental Design	19
	Subjects	22
	Development of the Case Study	22
	The Course of the Experiment	26
	Summary	39
	Conformers and Deviates	39
	Control Groups	43
	Effectiveness of Experimental Manipulations	43
	Data Collection	53
III.	RESULTS	58
	Testing the Hypotheses: Operational Predictions.	58
	Readiness to Change Opinion	62
	Selection and Distortion of Content	73
IV.	SUMMARY AND DISCUSSION	93
	Summary of this study	93
	Discussion	97
APPENDIX		102
	A. The Case of Johnny Sandron	102
	B. Content Analysis	108
REFERENCES		114

LIST OF TABLES AND FIGURES

TABLE		PAGE
1	Number of conformers and deviates in the various experimental conditions	42
2	Relationship perceived by deviates between own opinion and possibility of rejection by the group.	46
3	Relationship between Public-Private variation and perceived possibility that opinions would be made known.	48
4	Relationship between Rejection variation and perceived possibility of rejection	49
5	Relationship between Rejection variation and association of deviance in opinion with rejection.	49
6	Relationship perceived by deviates between opinion and possibility of rejection, showing interaction effect of experimental variations	51
7	Perception of deviation from group opinion.	52
8	Perceived relationship between opinion and possibility of rejection, comparing deviates and conformers.	52
9	Relationship between opinion and coefficient of imbalance	56
10	Frequency of change of opinion-- comparing "deviates" in experimental and control groups	64
11	Frequency of change of opinion-- comparing deviates and conformers in the experimental groups	65
12	Frequency of change of opinion--comparing deviates in the four experimental conditions	67
13	Frequency of change of opinion--comparing deviates in the four experimental conditions by their first and third opinion statements.	66
14	Frequency of change of opinion--comparing deviates in Rejection and Non-Rejection conditions	68

TABLE PAGE

15 Frequency of change of opinion--comparing deviates in Public and Private conditions 69

16 Frequency of change of opinion--comparing extreme and less extreme deviates 72

17 Amount of change of opinion toward norm--comparing extreme and less extreme deviates 73

18a Mean coefficients of imbalance for deviates who changed partway toward the norm--comparing the four experimental conditions. 77

18b " " " --comparing the two experimental variations. 78

19 Number of non-changing deviates at each opinion position--comparing the four experimental conditions. 78

20 Mean coefficients of imbalance for deviates who did not change their opinion. 79

21a Mean coefficients of imbalance for deviates who held position 5 at the final opinion statement-- comparing the four experimental conditions 84

21b " " " --comparing the two experimental variations. 84

22a Mean coefficients of imbalance for deviates who changed to position 5 from a more extreme position-- comparing the four experimental conditions. 86

22b " " " --comparing the two experimental variations. 86

23 Mean coefficients of imbalance for individuals at positions 5, 6, and 7--comparing the experimental and control groups. 87

24 Relationship between Coefficient of Imbalance and change of opinion while writing description 91

FIGURE

1 The opinion continuum 31

2 Form on which subjects indicated their opinion. . . 32

FIGURE PAGE

3 A typical opinion consensus for a group of thirteen and the fictitious consensus presented to that group 33

4 The schedule of the experimental session, showing differences in experimental conditions. . . . . 40 and. . . 41

THE EFFECT OF GROUP PRESSURES ON OPINION, PERCEPTION, AND COMMUNICATION

CHAPTER ONE

INTRODUCTION AND THEORY

PRIOR RESEARCH

The mechanisms by which a group or social organization establishes and maintains common beliefs and behavior patterns among its members have long been a subject of speculation and study among philosophers and social scientists. Early sociologists saw this uniformity as arising out of some sort of group-based force, often with the threat of group-imposed sanctions (e.g. Trotter's "herd instinct" or Durkheim's "collective representations"). Those psychologists who went beyond mere description of these phenomena would often conceptualize the problem in terms of some desire or instinct to conform ("imitation" or "suggestibility", for example, in the theories of Tarde and MacDougall). With the growth of social psychology, the problem of interaction between the social group and its members became a subject of progressively more precise scrutiny. Recent social-psychological studies regarding the mechanisms of conformity to group-established norms show consistently more theoretical refinement.

The early studies contributed considerably if only by demonstrating under controlled conditions that there was indeed some tendency to conform to a group "norm" or "standard". Munsterberg noted in classroom studies that individuals' estimates of such things as the number of dots on a screen may be influenced by what others in the group report (29, p. 406). H. T. Moore (28) found that majority opinion affected moral and aesthetic judgments.

These attempts have found more precise formulation and replication in later studies. Sherif, who in his now classic experiment observed the formation of and adherence to group standards about the apparent movement of a point of light in the dark, found similar influence on judgments of literary passages and on rate of tapping (35, 36). Asch (2, p. 450) observed the same pressures toward uniformity in the judging of relative size of lines. The deviate would tend to agree with the judgment of the group even when the group judged as longer one of a pair of lines which under most circumstances would certainly be seen as shorter. Newcomb (30) found the same tendency to conform in a natural setting. The longer students remained at Bennington College, the more they tended to accept the dominant political attitudes of the college community. The effects of group norms are not limited to judgments and attitudes. The tendency to adhere to a group standard of production was observed in both a field (8) and laboratory setting (33). If we re-examine the findings of Lewin and his students (25) on the inclination

of a group member to adhere to a group decision, we might note that these too could be interpreted as a tendency to adhere to a group norm.

Pressures toward uniformity

The effects of group standards and norms having been unquestionably established, the ground was laid for the exploration of the factors which make for greater or less "pressures toward uniformity". There is now considerable evidence that attraction to group, or "group cohesiveness", is a factor making for greater pressures toward uniformity (3, 12, 13, 15, 32). Pressure toward uniformity will also increase with increased relevance of the opinion or behavior standard to the functioning of the group (32).

The experiments to which the preceding paragraph refers contributed to and developed from a theoretical framework outlined by Festinger (11). After defining sources of pressure toward uniformity and pointing out factors which increase pressure toward uniformity--attraction to the group, relevance of opinion to group functioning, and amount of discrepancy of opinion, the theory further asserts that these pressures may be manifested in at least three ways: (1) as pressures acting on the individual to change his own opinion so as to make it more similar to the opinion of the group, (2) as pressures to influence others to adopt an opinion more like his own, (3) as pressures to reject those members of the group whose opinion is most distantly removed from the

individual in question. Each of the manifestations tends toward the attainment of uniformity in the group. With an increase in a factor which brings about pressure toward uniformity--degree of attraction to the group, for example--the individual will be more likely to either change his opinion, try to influence others, or reject members of the group. This has been demonstrated in a number of laboratory experiments (3, 12, 13, 14, 15, 16, 32). Presumably, an increase in pressure toward uniformity will result in an increase in any or all of these manifestations in varying degrees.

The statement that, given pressure toward uniformity the tendencies to change, influence others, and reject others will occur in varying degrees, suggests one aspect of this theory which is in particular need of development. It is not yet clear which conditions are more likely to make for one manifestation of pressure toward uniformity rather than another. Festinger and Thibaut (14) have demonstrated that heterogeneity of composition in the group will result in a greater tendency to reject others, rather than to change one's own opinion. Festinger (11) states that the amount of change in opinion in response to an influence attempt will decrease with increased involvement in own opinion, either because the opinion serves some important need-satisfying function for the person or because it is anchored in another membership group. Gerard (15) and Kelley and Volkart (21) present experimental evidence in support of this. The evidence

seems clear that with the anchorage of an opinion in an attractive reference group, the individual becomes more involved in that opinion, consequently less likely to change his opinion as a result of pressures toward uniformity. Would he in this case tend rather to attempt to influence others? Though this was not one of the initial hypotheses of this study, evidence will be presented which indicates that this is actually the case.

Another determinant of the particular manner in which pressure toward uniformity manifests itself might be the individual's own perception as to the most feasible path toward uniformity. A special case of this might be Festinger's hypothesis that "the force to communicate to (try to influence) a particular member will increase the more it is perceived that the communication will change that member's opinion in the desired direction." If the number of group members at the norm were great enough, the deviate might not consider it feasible to achieve uniformity by influencing all of the others to change. Pressure toward uniformity would then be more likely to manifest itself as a pressure to change his own opinion.

DEVELOPMENT OF PRESENT THEORY

A Consideration of Content

For better understanding of conformity phenomena, we need precise analyses of the content of communication. These

analyses should show the effect of pressures toward uniformity upon the specific items of content communicated. In most of the studies described above, communication was equated with attempt to influence. A finding that there was an increased volume of communication has been accepted as evidence that there was increased pressure toward uniformity, the communication being the result of pressure to influence others to change their opinion toward the communicator. An analysis of the content is necessary to show the extent to which this content actually is composed of items which tend to support the position of the communicator and is thus designed to influence the recipient of the communication to change his opinion.[1] It might also show that under some conditions, pressures to change rather than pressures to influence would have the greatest effect on content of communication. How then does one go about distinguishing between (1) content in communication which represents an attempt to influence and (2) content which is communicated in response to other pressures, such as pressure to change?

To help us in our understanding of a method of analysis which makes this distinction and its relevance to our theory, let us consider expressed content bearing on an ambiguous object prior to the operation of pressures toward uniformity.

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[1] Back (3) did an analysis of this sort. He included, in his precategorized observation schedule, categories such as "stating position, reasoning, reiteration (of own position)" which could be interpreted as attempts to influence.

For example, a subject writes a private description of a juvenile delinquency case which he has just read, e.g. a delinquency case such as "The Case of Johnny Sandron" which is the basis of discussion in the present study.[1] The writer of the description would have at his disposal a choice of innumerable items of content, such as the following, which could be included: (1) Johnny lived in a neighborhood where crime was prevalent; (2) He had stabbed and robbed an elderly lady; (3) He had been mistreated by the lady whom he had robbed; (4) His parents had treated him as an unwanted child; (5) He had a long record of theft; etc. Knowing nothing further about the subject's motives for writing the description of this case, we would have no reason to expect that he would include one of these items rather than another.

Now let us interject another factor. The individual is asked to state his opinion about the extent to which Johnny is personally responsible for his misdemeanors and the extent to which his misbehavior is due to environmental factors. This now permits us to make a distinction which will assume some importance in the discussion which follows--a distinction between "opinion" and "object of the opinion".

For our working definition of "opinion" we may accept one commonly used--"a conviction (belief) about some person or object which falls short, however, of positive knowledge." (39) That something to which the opinion is related will be

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[1] Appendix A.

referred to as the "object of opinion". The opinion, in our example, is the position that the individual takes on the question of whether (a) the juvenile delinquent is personally responsible for his misbehavior or whether (b) his behavior is more environmentally determined. The subject may, for example, say that he feels that the environment of the boy is almost entirely responsible for Johnny's predicament. The object of opinion would then include everything related to Johnny and his environmental situation.

As a result of the statement of opinion, all items of content bearing on the object of opinion, as in the example above, may now be considered in terms of whether they tend to support or negate the opinion in question. The individual who has formed his opinion may not be aware of all the items of content bearing on the object of his opinion. Those items which he has perceived and retained we will call his "cognitive content". Since he has stated an opinion to the effect that the environment was mainly responsible for Johnny's crimes, we would seem justified in assuming that his cognitive content included a greater number of items supporting that position.

Pressures toward uniformity and communicated content

Next let us introduce pressures toward uniformity. This individual finds himself in a group where others hold an opinion which is contrary to his own. In this example, the others think that the delinquent is responsible for his own

behavior. If pressure toward uniformity now shows itself as pressure to influence others, the individual in question, communicating to the others, should tend to select the items which he communicates. He should select from the items in his cognitive content those items of content which support his own opinion and those items which tend to negate the opinions of those who differ from him. He should also tend to distort and reinterpret ambiguous items in a similar manner. The greater the pressure to influence others, the greater should be the selection and distortion of content. The resultant items, which he actually transmits to the others in the group, we will hereafter refer to as "communicated content".

The situation may also lead to uniformity pressures in the guise of pressure to change one's own opinion toward the opinion taken by others in the group. Uniformity may be necessary for the group to continue its activity and the group norm may be so strong that the deviate cannot hope to influence the opinion of everyone. Or the individual's involvement in his own opinion may not be great, so that he will be more favorably disposed toward the group norm. If, under these conditions, the individual is required to communicate about the object upon which the opinion bears, he will now tend to select and distort items which he communicates so that his communications support the group opinion and tend to negate his own original opinion. These group-norm oriented distortions of communicated content will

occur even if he does not actually change his opinion toward the group norm. In our example, where the group was of the opinion that Johnny was personally responsible for his crimes and the individual felt that the environment was responsible, the deviate would tend to communicate items of content which show that the environment was favorable to the delinquent and that Johnny was responsible for his crimes. This occurs despite the fact that he initially held, and may still hold, an opinion which places major responsibility on the delinquent's environment. The reason for this discrepancy between the deviate's opinion and his communicated content is that pressures toward uniformity, here expressed as pressure to change, would operate on communication before they operate on the opinion itself. If there is increase in pressure-- if the group may reject him for deviance, let us say-- these tendencies to distort and select content to support the group norm will increase.

Changes in Perception

Thus far we have discussed the effects of group pressure on selection and distortion of content at the communicational level--the communicated content being selected and distorted from the total available items of content in the object of opinion. There is also good reason to believe that the group has influence on what the individual actually perceives and retains of the innumerable possible items in the object of opinion. We have already used the term "cognitive content"

to refer to these items, selected and distorted from the object of opinion.

We may note that communicated content represents a second-order selection and distortion since it is itself selected and distorted from the cognitive content.

It has already been experimentally established that physiological and derived needs influence perception and cognition. (4, 5, 7, 24) Pepitone (31) investigated the perceptual effects of needs deriving from a social situation. He found that in a situation where several "gatekeepers" had the power to grant a reward, the subjects tended to overestimate the power of the gatekeeper who was favorable to him.

The distinction between perceptual change and communicated change in response to group pressures is an important one. Asch (2, p. 469) felt it necessary to make this distinction. He studied subjects who, yielding to group pressures, agreed that one line was longer than another, despite the fact that the opposite was obviously true to any impartial observer. Interviewing these subjects afterwards, he found that only one subject in 31 actually reported a change in the perception of lines. Others admitted that they doubted their own perceptions and therefore conformed, while a third group admitted that they conformed only at the verbal level, due to a desire "not to appear different".

The question arises as to whether private (cognitive)

change toward conformity would be more common the more ambiguous the situation. Sherif's study, involving judgments of movements of a point of light under very ambiguous circumstances, indicate that this is so (36). It would seem that where the group norm is an opinion about an ambiguous object, influences at the cognitive level should also be common.

Kelley and Volkart (21) have distinguished between public or communicated change in opinion and private change in opinion,[1] and have experimentally emphasized the discrepancy between the two in response to differing pressures toward uniformity. Private change of opinion would approximate change at the cognitive level. Public change of opinion would represent change at the communicated level. Where pressure toward uniformity manifests itself as pressure to change, conformance to a group opinion would be increased at the cognitive as well as at the communicated level. This is to say that the person will tend to change his opinion even when he need not tell the others in his group what his opinion is. However, here again, pressure to change will operate at both levels, increasing at the communicational or public level any change which has occurred at the private level. Thus the amount of change as evidenced in the reported opinion will be equal to or greater than that which has occurred at the cognitive level.

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[1] Schanck had made a similar distinction much earlier in a community study (34).

With the public announcement of opinion, as required by the situation, and with pressure to change, the change at the cognitive level should be increased by the very fact that the public announcement adds to the possibility of applications of group pressures. The same would hold true even if the individual did not have to publicly state his opinion, provided the situation required that he communicate about the object of opinion. Communicating about the object of opinion would also increase possibility of group pressures operating, as does actual statement of opinion, though to a lesser degree.

Provided that the individual is attracted to his group, with increased possibility of being rejected by the group for non-conformity, the deviate will also experience greater pressures to conform.

Pressures toward uniformity and cognitive content

We have thus far discussed the manner in which pressures toward uniformity operate to select and distort communicated content, and how they operate to influence both private and public opinion change. It logically follows that just as pressures toward uniformity operate to effect opinion change at both the private and public level, they should also operate to select and distort not only communicated content but also cognitive content related to that opinion. Pressures to distort and select content, which we have already discussed with reference to communicated content, should operate in an analogous manner upon cognitive content. When

pressure toward uniformity manifests itself as pressure to influence others, the individual will tend to include in his cognitive content those items which tend to support his own point of view and negate the opinion of those whom he wishes to influence. He will look for and retain items which he can communicate. When there is pressure to change his opinion toward the opinion held by the others in the group, he will tend to include in his cognitive content those items which are supportive of the group norm. Without completely conforming, he might, in fact, alter his opinion so that it is more nearly like the opinion held by others in the group. He would then still be affected by pressures to change. The greater the pressure to change, the more would he tend to include, both in his communicated content and cognitive content, items which support the group norm.

We might repeat that the communicated content represents a second order selection and distortion of the object of opinion. First there is selection and distortion at the cognitive level, with only certain items perceived and retained and some of these distorted. Depending upon whether the deviate experiences pressure to influence or pressure to change, the content actually perceived will include an exaggerated number of items supporting the individual's own opinion (if there is pressure to influence others), or an exaggerated number of items supporting the opinion taken by others in the group (if there is pressure to change toward the opinion of others in the group). Secondly, from the

cognitive content, the same pressures should result in further selection and distortion of the communicated content. Since these two effects are cumulative, we would expect greater distortion in content communicated than in cognitive content.

It may seem that we have considered the two opposite effects of pressures toward uniformity as if they operated separately. Actually, we do not mean to preclude the possibility of both pressures to change and pressures to influence operating concurrently. We would suppose that they do operate at the same time as a rule. The change in opinion which actually occurs is the resultant of the opposing pressures operating at the given moment. The degree and direction of distortion and selection of content, both cognitive and communicated content, is also a resultant of these two opposing pressures.[1]

FOCUS OF THIS STUDY

This study was designed to focus primarily upon the effects of pressure toward uniformity upon a deviate, when this pressure is manifested in pressure to change his opinion toward the group norm rather than attempt to influence others.

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[1] From this we might derive that, when the opposing pressures are equal, there should be no change of opinion or distortion of content. What might in fact occur, however, is a disequilibrium of opposing pressures and a fluctuation over time. At a given moment, items supporting one opinion will be seen and communicated; at another time items supporting the opposing opinion would be prominent.

We wished to study the effect of such pressures on private change of opinion. Furthermore, while keeping the opinion itself private, we wished to study the effects of pressure to change on both cognitive content and communicated content.

We formulated hypotheses which would hold for an individual under the following conditions: (a) The individual is a deviate from a well-defined opinion held by the greater part of a group of which he is a member; (b) He is highly attracted to that group; (c) He has no very strong involvement in his own initial opinion, either through anchorage in other reference groups or because it satisfies personal needs; (d) There are pressures toward uniformity acting on the group; (e) The individual cannot easily achieve uniformity of opinion in the group through influencing others; (f) The situation requires that he communicate to the group about the object of opinion, but not about the opinion itself. Under these conditions, we predicted that the following hypotheses would hold true:

1. There will be pressures on the individual, in communicating to the group, to select and distort communicated content in the direction of supporting the group opinion:
   - 1.1. To communicate content which supports the group opinion.
   - 1.2. To refrain from communicating content which is not in keeping with the group opinion.
   - 1.3. To distort and reinterpret content which

initially is counter to the group opinion in such a manner that it does support it.

2. These pressures will be operative at two levels--at the level of actual communication and at the cognitive level:

   2.1. Prior to actual communication, the individual's cognitive content (his perception, memory, cognitive organization of items related to the opinion) will be influenced by these pressures to select and distort items in the direction of supporting the group norm.

   2.2. Having established a distorted cognitive content relating to the opinion, there will be further pressures to select and distort items from that cognitive content which are actually communicated.

   2.3. Accordingly, the content communicated will show the effects of distortion at both the cognitive and communicational levels, and will therefore show more distortion and selection than would be obtained at the cognitive level.

3. These selective and distortive pressures will be increased at both communicational and cognitive levels to the extent that the individual perceives a possibility of rejection by the group for deviance.

4. There will be corresponding pressures on the deviate

actually to change his opinion toward the group norm, even when he need not state the opinion itself to the members of the group.

4.1. There will be greater pressure to change his opinion toward the group norm when the individual perceives a possibility of rejection by the group for deviance.

4.2. There will be greater pressure to change his opinion the greater the extent to which he is required by the situation to communicate to the group about the object of opinion.

CHAPTER TWO

EXPERIMENTAL METHOD

This chapter is devoted to the methods utilized to test the hypotheses just stated. It will begin with a brief general description of the experimental design and a discussion of how the design relates to both the hypotheses themselves and the conditions under which these hypotheses are expected to hold true. Following a description of the object of opinion--"The Case of Johnny Sandron", the experiment will be described in greater detail, according to the course which it followed in the laboratory. Data will then be presented to show the effectiveness of the experimental manipulations. Finally, the methods of gathering data, on both opinion change and distortion and selection of content, will be discussed.

GENERAL EXPERIMENTAL DESIGN

The basic experimental situation involved the reading of an ambiguous case of a juvenile delinquent by a group of subjects who were preparing to write a group description of that case.

1. Constant conditions

Included here are the conditions which were stated in the preceding chapter as being necessary for the hypotheses

to hold true:

a. Deviance from a group opinion.

After reading the case study, subjects privately stated to the experimenter their opinions about the extent to which the juvenile delinquent was personally responsible for his crimes. A consensus, presented on the blackboard, falsely indicated to most subjects that they were deviates from a well-defined group norm.

b. Attraction to the group.

Attraction to the group was increased by an induction used in previous studies and by a warm-up period. In addition, attraction to the task was increased by picking an interesting discussion topic and by assigning subjects to the task of their choice.

c. No strong involvement in own opinion.

We selected an opinion continuum for the experiment for which there should be no strong individual involvement or group anchorage, though a moderate degree of involvement was necessary. The opinion about personal responsibility was expected to fulfill this condition.

d. Pressure toward uniformity acting on the group.

The group was told that all members would have to agree that their group description of the case contained all the important items and was a clear picture of the case. They were also told that their group description would be rated by a group of judges.

e. Difficulty in achieving uniformity through influence.

This condition was fulfilled by having a strong group norm and limited time period, so that the subject could, presumably, not hope to influence everyone else to change toward his own opinion.

f. Communication about object of opinion but opinion itself kept private.

In order to write the group description of the case study, all members of the group were expected to discuss details of the case study. However, the opinion as to the personal responsibility of the delinquent was to be kept private at all times.

2. Independent Variables.

a. Possibility of rejection.

To test hypotheses about the effect of increased group imposed pressures toward uniformity, possibility of rejection was varied. In some groups, subjects were told that they would have an opportunity to reject from the group persons who did not "fit in". The deviates should in this case feel that they might be rejected. In other groups, subjects were told that everyone would remain in the group.

b. Distortion and selection at the communicational and perceptual levels.

All group members were told to write individual descriptions of the case study. In some groups, members were told that their individual descriptions would be shown to

everyone in the group. This Public condition was designed to allow for measures of selection and distortion of content at the communicational level. Other groups were told that their descriptions were to be used to help them formulate their ideas. The Private condition would give us a measure which approximated more closely distortion and selection at the perceptual or cognitive level.

3. Measures of Dependent Variables.

From the hypotheses we made predictions about two types of behavior--private change of opinion and distortion of content bearing on that opinion. The former was measured by comparison of opinion statements at various times during the experimental session. The latter was obtained from a content analysis of the individual descriptions.

SUBJECTS

A total of 399 subjects contributed data to this experiment. These were distributed among 33 experimental groups and seven control groups. Each experimental group was composed of from ten to fourteen undergraduates who volunteered in various classes at the University of Michigan. There were six to nine subjects in each control group. Each group was homogeneous with regard to sex.

DEVELOPMENT OF THE CASE STUDY

In choosing an object about which subjects were to form an opinion and which they could discuss, the following

criteria were considered:

(1) The object should relate to an opinion about which subjects would be only moderately involved. If the opinion about the object were either anchored strongly in some other reference group or to strong individual needs, then no change would be likely to occur (11).

(2) It should be such that subjects could draw data from this object to support a series of related opinions. It should be possible to order this series of opinions along a general continuum.

(3) It should be sufficiently ambiguous or self-contradictory so that alternative items of data could be selected to support most of the points along the opinion continuum.

The object finally selected was a case study of a juvenile delinquent child, a completely revised version of the case of "Johnny Rocco" (10).

Prior to the construction of the case study, the related opinion was selected. Basically, the opinion considered was the answer to the question,

> "...to what extent is Johnny personally responsible for his crime and to what extent should his environment be considered as being responsible?"

However, a reading of the continuum of opinion (Figure 1, p. 31) would indicate that the continuum was composed of several other related dimensions such as degree of favorableness to Johnny. It seemed intuitively reasonable to assume that these opinion dimensions were sufficiently correlated (at

least with regard to effects desired in this study) to justify their combination in a single continuum. A person who is favorably disposed to Johnny would tend to attribute his crime to the conditions in which he lived; a person who is negatively disposed to Johnny would rather tend to blame Johnny personally for his crime and would tend to point out the positive influences in his environment. Once the opinion continuum was constructed, we were ready to compose the case study which would bear on that opinion.

The object was to get a story from which details could be selected to support either end of the opinion scale. Bearing this in mind, details were selected from the case of "Johnny Rocco" which seemed to clearly support the "positive-to-Johnny", environmental, end of the opinion scale. Other items were selected which supported the "negative-to-Johnny" end of the scale. For each "positive" item, a comparable "negative" detail was either drawn out of the original study or composed. "Negative" items were similarly counterbalanced. For example, a negative item in the original Johnny Rocco case stated that Johnny organized a gang of smaller boys whom he encouraged to break school rules, steal, and destroy property. This was countered by a positive item stating that he organized a gang of boys as a baseball and athletic team; though many of these boys stole, Johnny discouraged this and punished some of them. The method used here was one of contradiction. Another balancing technique was the inclusion of some justification for improper behavior. Thus,

a statement to the effect that Johnny disrupted the classroom, smoked, swaggered, and used foul language was countered by another item which pointed out that Johnny behaved this way particularly after he had experienced failure.

These items could not, of course, be meaningfully included in one objective report, so it was decided to use them to construct three interviews. There was an interview with Johnny's mother, one with his teacher, and an interview with Johnny himself. Each interview was generally internally consistent, but often carried data which contradicted statements in the other two interviews. In the construction of the final version of the case study, some of the "negative" items were removed so that, accenting a common bias among college students, we would get a distribution of students on the opinion continuum which was highly skewed toward the "positive-to-Johnny" end of the scale. The reason for this was purely practical. We wished to have as many subjects who held one extreme position as possible so that we could, by one false consensus, induce as many as possible to believe that they were deviates from a group norm.

The case study, so revised, was pretested informally among potential subjects, as well as with more sophisticated students, in order to eliminate glaring inconsistencies and to insure that, despite its contradictions, the set of interviews could be accepted as factual. The revised, ambiguous and contradictory, Johnny was thereafter referred to as "Johnny Sandron". (SEE Appendix A).

THE COURSE OF THE EXPERIMENT[1]

Seen through the eyes of a naive subject, the experimental session was simply designed to gain scientific knowledge about what goes on in a group problem-solving situation. He finds himself part of a group of from ten to fourteen fellow students who are to play the role of social workers, read through an actual social work case, and write a group report on that case. He reads through three interviews bearing on the case of a juvenile delinquent, but before having the group discussion, which is to prepare for the group report, he must first write his own individual report. The purpose of the individual report is to make the discussion run more smoothly. He is also asked to state his opinion on the extent to which the child is responsible for his actions. However, he is assured that this is a private matter between him and the experimenter--his opinion is not to be related to the group discussion. Before the actual group discussion begins, however, he is interrupted. The experiment is over and its exact nature is explained to him. He then discovers that the situation is structured in a manner much more complex than he at any time imagined.

1. Production of high attraction to group.

Back (3) distinguished between personal attraction to

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[1] For an overall view of the experimental session, the reader may refer to a graphic summary of this section, which is presented in Figure 4, (p. 40).

the group and attraction to the group because of "task direction". In the former case, the individual members are seen as attractive; in the latter, the group mediates goals for the individual, the task in which the group is involved being attractive. He found that pressures toward uniformity increase with attraction to the group in either case. Since high attraction to the group was desired in this study, both sources of attraction were utilized.

The attractiveness of the task was generally increased by picking a discussion topic which would be interesting. Task attraction can also be increased by allowing the subject to choose his task (25, 31). Therefore when subjects were asked to sign up for the experiment, they were told that they could choose the type of discussion group in which they would take part. On the recruiting form they could either check "human relations and social problems" or indicate an interest in "accident and fire prevention". Only those who checked the former were used in this experiment and it was emphasized to them that they had been placed in a discussion group of their own choice.

Both attraction to the task and attraction to individual members were increased by a semi-controlled discussion period which began when about half the members had arrived and continued for several minutes after the last member arrived. Presented as an interesting topic related to our study, the discussion concerned the relative value of group decision as compared to individual decision in handling a social work

case.

> "A social worker meets with a number of difficult problems, many of which she cannot decide immediately on her own. Should she attempt to solve her problems without consulting others, or should she rather take her problem to the total social work staff?"

The topic was such that there would be mild disagreement, but, it seemed, no more than enough to make for discussion. It was hoped that this interaction in a controlled area would increase both personal attraction and attraction to group task.

When the discussion had proceeded for a sufficient period of time, the experimenter would point out that the study, in which they were taking part was designed to throw light on this very problem. The experiment was presented as an attempt to understand more about how a group goes about solving its problems.

> "...we want to know more about the dynamics behind the group decision. Exactly what happens when a group solves a common problem like this? Furthermore, what effect does the type of group have upon the way the discussion goes and the way the decision is reached. Now, we asked you to come here as a particular kind of group so that you could discuss an actual social work case, just as an actual social work staff would. In that way we hope to get answers to the question of how the discussion goes on in the real life social work group."

Yet another technique to increase group attractiveness was utilized. This was a device used successfully in a number of previous experiments to increase the personal attraction of members to one another (3, 12, 15, 32). On their volunteer form, the subjects had filled in certain information about their interests, the sorts of things

which they liked or disliked in others, and the characteristics which best described themselves. They were now told that we had selected for this group "people who were alike in certain important respects which we considered crucial for our study" and also people with similar likes and dislikes. All groups were, in fact, selected only according to their free time, without reference to this sort of information from the volunteer form.

2. Initial reading of the case study.

Having created a condition of congeniality in the group, we were now ready to proceed to the group task. The "Case of Johnny Sandron" was passed out and subjects were told to read through it rapidly at this first reading--they would be given another opportunity to read through it later on. This case, it was pointed out, would be the topic of their group discussion.

3. First individual opinion statement.

When everyone had finished reading through the case study for the first time, subjects were asked to indicate their opinion on the extent to which Johnny was personally responsible for his crime. On one form before them, the opinion continuum was spelled out as in Figure 1. Subjects were asked to pick the opinion which most nearly approximated their own and to mark the appropriate opinion on another form (Figure 2). The form on which they marked their opinion was constructed to give the opinion continuum the appearance of unidimensionality. Though subjects were asked to indicate their names

on these forms, they were assured that their opinions would not be made public to the others in the group. Furthermore, they were told that the purpose of asking them to state their opinions was to get a better understanding of the group process--it was not to be related to the group discussion and report which they would make later. Therefore, the subjects were not to tell others exactly which opinion they held.

4. Presentation of false consensus making most members deviates.

The next operation was designed to make as many members as possible think that they were deviates from a well-defined group norm.

> "You are probably curious about how others in this group think about the extent to which Johnny is responsible for his crime. Therefore I shall place on the blackboard here the number of people who have chosen each position. I shall indicate this with an 'X' so that it will not be necessary to identify each person specifically."

Most college students tend toward the "positive-to-Johnny" end of the scale (taking positions 5, 6, and 7 on the opinion continuum of Figure I.) The case study was designed to insure that this would be the case. However, regardless of the actual consensus obtained, the consensus presented at the blackboard would show that at each of the positions, 4, 5, 6, and 7, there was only one person; at position 3 there were two people; all the remaining people were at position 2. The result was that the great majority of subjects, who had in fact chosen positions 5, 6, and 7,

FIGURE 1. THE OPINION CONTINUUM

Considering the good and bad features of Johnny's basic personality and behavior and of the world in which he lived, as well as the nature of the crime, to what extent is Johnny personally responsible for his crime and to what extent should his environment be considered as being responsible?

1. Johnny had many decent influences of which he could have taken advantage. The conditions under which he lived were friendly enough so that they can hardly be held responsible for his misdeeds. The blame for his crime must be placed entirely upon his shoulders.

2. Though Johnny may have been slightly influenced by the harmful conditions under which he lived, there were also many helpful factors to counterbalance them. He did not take advantage of these. Considering this it seems that by far the greatest part of the blame still rests on his shoulders.

3. There were many helpful influences even if harmful ones were present and it is still Johnny who is blameworthy for his crime and behavior in light of this.

4. Johnny had both helpful and disturbing influences. The blame for his crime must be placed equally both on Johnny and on conditions in which he lived.

5. Johnny did have helpful influences, but more that encouraged crime and delinquency. Johnny's behavior was at times praiseworthy. Thus, though Johnny should be held responsible for his crime to some extent, more of the blame rests not on his shoulders but upon the conditions in which he lived.

6. Johnny never really had much of a chance. Though there was some slight choice left to him, so that he might be held responsible to some small degree, the general situation in which Johnny found himself contributed infinitely more to his becoming a criminal. In light of this, together with the many good aspects of his behavior, we must consider Johnny as largely a victim of his circumstances.

7. Considering the terrible conditions under which Johnny lived, it would seem almost a miracle that he didn't come out worse than he did. In spite of everything, Johnny's behavior was still essentially good. Not he but his environment is entirely to blame for his misdeeds.

FIGURE 2. FORM ON WHICH SUBJECTS INDICATED THEIR OPINION.

Name _____

Check the number most nearly representing your opinion as to the extent to which Johnny's environmental conditions or he, personally, should be considered as responsible for the commission of the crime.

(1)		Johnny Responsible
(2)	Environment Responsible	Johnny Responsible
(3)	Environment Responsible	Johnny Responsible
(4)	Environment Responsible	Johnny Responsible
(5)	Environment Responsible	Johnny Responsible
(6)	Environment Responsible	Johnny Responsible
(7)	Environment Responsible	

believed from this false consensus that they were deviates from a well-defined group norm. In Figure 3 we see an actual consensus which was typical of that actually obtained for a group of thirteen. Alongside is the consensus which would be presented to any group of thirteen. Note that it was necessary to have at least one "X" at each position where a subject had checked his opinion. No subject ever chose

position 1.

FIGURE 3. A TYPICAL OPINION CONSENSUS FOR A GROUP OF THIRTEEN AND THE FICTITIOUS CONSENSUS PRESENTED TO THAT GROUP

ACTUAL CONSENSUS	PRESENTED CONSENSUS
1.	1.
2.	2. XXXXXXX
3. A	3. XX
4. SL	4. X
5. DKFJG	5. X
6. HQPW	6. X
7. T	7. X

The reaction to the fictitious consensus was often one of shocked surprise, but in only a few cases was there actually a strong suspicion of the manipulation. These suspicious subjects were identified after the experimental session and were not considered further in the analysis.

5. Further pressure toward uniformity acting on the group.

It was again pointed out that everyone in the group would have to agree on a final group report--to agree that this report gave the clearest possible picture of Johnny, so that the report could be used to frame a clear recommendation about the sort of treatment which should be given him. The report had to be concise, leaving out items which were not as important, or which tended to make the case confusing.

"Though the group could conceivably argue indefinitely about small points, most groups have managed to agree on a report in the time allowed."

6. Induction of Public and Private conditions.

In order to get some measures of selection and distortion of content related to the opinion, it was necessary to get individual descriptions of the case study. If this description was to be seen by everyone else in the group, if it was to be made public, then we would consider this as offering a measure of selection distortion of communicated content. If the description was not to be seen by others--was to remain private--it would offer an approximate measure of selection distortion at the perceptual or cognitive level.

Subjects were told that in order to help them compose an adequate group description in the alloted time, each member would first write his own individual report on two very central topics which would be part of the final description. At this point the difference between the Public and Private conditions was introduced:

a. Public Condition.

In the Public condition, subjects were told that this individual report would be labeled with the name of the writer and passed around to everyone else in the group. Thus, each report would be read by every other member of the group. This would now give the group some basis for the discussion of which points should and which should not be included in the final report.

b. Private condition.

In the Private condition, each individual report was to be seen only by the experimenter and by no other member of the group. The writer's name was still to be included, however, for the purposes of analysis. The description in the Private condition was seen as merely to help the writer to formulate his ideas so that the discussion would proceed more smoothly.

7. Further pressures toward uniformity through incentive for good group report.

The effectiveness of the various group pressures which are presumed to operate in this situation depends upon some concern on the part of group members with a group product, a group product which requires some uniformity in the group. For that reason, the importance of a good group report was stressed. Subjects were told that all group reports would be judged by a board of experts in the field of social work and social science. The purpose of the expert rating was, presumably, to allow the experimenter to see how different groups compared in ability. When all reports had been judged, each participant would receive a letter telling him how his group's product compared with that of other groups.

8. Variation of possibility of rejection.

a. Rejection condition.

Subjects in the Rejection conditions were told that since it was especially important that members of the group get along well together, we were offering an opportunity to

the group which was quite common in real life--they would have an opportunity to reorganize their group to exclude those members with whom they could get along least well. This would occur, they were told, after they had had a few minutes in which to discuss the first two points of the case study. (In the Public Rejection conditions, this would occur after they had had an opportunity to read the individual reports written by other members of the group.) Each member would simply write on a secret ballot the names of the three people whom he would like excluded. The three people with the most votes would then presumably leave the room. These ejected people would take part in an individual study which was pictured as being somewhat less attractive. Actually the experimental session ended before anyone could be rejected.

b. Non-rejection condition.

No comparable instruction was given to the Non-rejection conditions. It was emphasized that everyone would continue with the group and would have a hand in the group report.

9. Rereading of the case study.

At this point, time was allowed for a second reading of the case study. It was emphasized that, whereas the first reading was meant merely to get a general notion of the case, the second reading would give the subjects an opportunity to read the case more carefully, selecting the important details which one would want to include in the final report.

The case study was to be collected before discussion or writing began.

10. Second statement of opinion.

After rereading the study, members were again asked to indicate their opinions as to the degree that Johnny was responsible for his crime. It was emphasized that this would remain strictly private--no one would see what opinion was held by others in the group--and that the opinion was not relevant to the discussion which would be held later. The opinion slips were collected but no report was given of the positions taken by others on this consensus. While subjects were indicating their opinions, the case studies were collected.

11. Writing of the individual reports.

A form was now passed out which had on it a structuring outline for the individual report. At the top of the outline, subjects were asked to write their names. The instructions read:

> "Within the two general topics below, write anything which you consider pertinent to a completely factual description of the case of Johnny Sandron. Concentrate on getting in all the facts in these areas; avoid recommendations or opinions."

The first topic dealt with a description of the crime with additional instructions included in parentheses:

> "Here you may want to include such things as a description of the crime itself, Johnny's motives, the victim, her relationship to Johnny, his attitude toward the crime, etc."

The subject was allowed seven lines in which to write and

then there was introduced the second topic--Johnny's relationship to others--again additional instructions were parenthetically added and nine lines for writing allowed:

> "Here you may want to include such things as a description of Johnny's treatment by others, his treatment of others; his family, at school--his teachers and schoolmates, in the neighborhood--his playmates, the police, etc."

Subjects in Private conditions were assured that, though names were included with the individual description, these reports would not be seen nor identified by anyone other than the experimenter. The outlines were collected when they were filled out but in no case were they actually passed around.

12. Final statement of opinion.

Members of the group were asked for a third time to indicate their opinions about the extent to which Johnny was responsible for his crime. Again privacy of opinion was assured.

13. Final questionnaire.

A questionnaire with a number of precoded items was passed out. Each subject was assured that his responses to this would be seen only by the experimenter. The questions were designed to test the effectiveness of the experimental variables and to add other related data.

14. Explanation of the experiment.

When the final questionnaire had been filled out by all the subjects and collected, subjects were informed that the experiment was now officially over--that they would have an opportunity to discuss the case study if they liked, but no

further data would be collected. The reasons for the various manipulations and all cases of deception were carefully and fully explained. The actual consensuses were presented on the blackboard, showing changes of opinion which took place. Subjects were encouraged to discuss their reactions, ask various questions, and give suggestions as to how the experiment could be improved. Considerable interest developed and a promise was made that the essential results of the study would be communicated to them.[1] The importance of keeping secret the details of the experimental manipulations was stressed, after which subjects were allowed to leave.

SUMMARY OF THE COURSE OF THE EXPERIMENT.

A summary of the course of the experiment, showing the differences in conditions and including the unfulfilled part of the experiment as anticipated by subjects, is shown in Figure 4.

CONFORMERS AND DEVIATES

In the analysis which follows, we consider as "conformers" those whose initial opinions were at positions 2, 3, or 4, on the continuum of opinion (Figure 1), that is those who held a position at the group norm or adjacent to the norm. We classified as "deviates" those whose initial opinions were

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[1] Upon completion of the analysis of data, each participant received a letter which thanked him for his cooperation and reviewed the experiment and results.

FIGURE 4. THE SCHEDULE OF THE EXPERIMENTAL SESSION, SHOWING DIFFERENCES IN EXPERIMENTAL CONDITIONS.

	PUBLIC REJECTION	PUBLIC NON-REJECTION	PRIVATE REJECTION	PRIVATE NON-REJECTION
1	Meeting of group members and preliminary discussion about group decisions and individual decisions.			
2	Reading of case study, "The Case of Johnny Sandron".			
3	Private statement of individual opinion regarding "personal vs. anvironmental responsibility".			
4	Presentation of false group consensus, indicating to most participants that they were deviates from an almost unanimous group norm.			
5	Told to prepare to write a group description of the case study, first write individual description.			
6	Individual report would be seen by everyone.		Individual report would be seen only by the experimenter.	
7	Final group report would be judged and rated by a board of experts.			
8	Group would be allowed to reject members.	All would continue as group members.	Group would be allowed to reject members.	All would continue as group members.
9	Second statement of individual opinion regarding placing of responsibility.			
10	Second statement of opinion regarding "personal vs. environmental responsibility".			
11	Actual writing of individual description of the case study.			
12	Third statement of opinion regarding "personal vs environmental responsibility".			

FIGURE 4. (CONTINUED:)

	PUBLIC REJECTION	PUBLIC NON-REJECTION	PRIVATE REJECTION	PRIVATE NON-REJECTION
13	Final questionnaire, including various questions to test experimental conditions.			
	EXPERIMENT ACTUALLY ENDED AT THIS POINT. SUBJECT PRESUMABLY ANTICIPATED THE FOLLOWING:			
14	Individual report passed around for all to read.		Individual report collected by experimenter, not read by anyone in the group.	
15	Discussion of individual reports and beginning of group report.		Discussion of beginning of group report.	
16	Vote by closed ballot to reject some members.		Vote by closed ballot to reject some members.	
17	Rejected members leave to work on other study.		Rejected members leave for other study.	
18	Further discussion of what should go into the final group description.			
19	Actual composition of group description of "The Case of Johnny Sandron".			

at positions 5, 6, or 7. The bases for classifying the latter as deviates were (1) that they held opinions on the opposite side of the neutral point, 4, from the supposed group mode, and (2) that they would each see themselves as one of three people most distantly removed from the group, hence particularly subject to rejection in the Rejection conditions.

The distribution of conformers and deviates in the experimental groups is shown in Table 1.

TABLE 1. NUMBER OF CONFORMERS AND DEVIATES IN THE VARIOUS EXPERIMENTAL CONDITIONS.[1]

	PUBLIC		PRIVATE	
	Conformers	Deviates	Conformers	Deviates
Rejection	24	74	18	76
Non-Rejection	11	67	17	57
Control[2]	7	24	4	20

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[1] We relied upon randomization to equalize the number at each opinion position in each condition. As this table shows, the proportion of conformers to deviates does vary somewhat between conditions. As to specific positions, no systematic relationships obtained, except that there was a somewhat greater number of position 5 deviates in the Private Rejection condition.

[2] Though controls are separated into conformers and deviates for purposes of comparison, these terms do not really apply here since controls were not aware of any group norm.

CONTROL GROUPS

In addition to the experimental groups described above, seven groups were "control groups". These groups differed from the experimental groups in that (1) there were fewer subjects in each group (7-9), (2) possibility of rejection was not mentioned in any of the groups, (3) no consensus of any kind was presented on the blackboard. Four of these groups were told that their individual reports would be made public; three were told that their individual descriptions would remain private.

Since their size and other conditions were not comparable, it would be difficult to compare the control groups with the experimental groups on many measures. The reason the control groups were used was mainly pragmatic. When less than ten subjects showed up, it was felt that the usual experiment could not be conducted, due to the difficulty in establishing the necessary group consensus. However, it was not considered in the best interests of all concerned to send home nine subjects without giving them an opportunity to participate. It was therefore decided to go through with the experimental session anyway and make use of the subjects in control groups.

EFFECTIVENESS OF EXPERIMENTAL MANIPULATIONS

In the questionnaire given to subjects after the conclusion of the experimental session, there were included

a number of questions which were designed to assess the effectiveness of various experimental manipulations. The data as to our success in producing the desired conditions will be presented in this section.

1. Effectiveness of methods of producing high attraction.

In all groups, we attempted to obtain a high degree of attraction to the group, both in terms of attractiveness of the task and attractiveness of the individual members. The first three questions on the questionnaire were specifically aimed at getting some clues as to the extent to which the subjects were actually attracted to the group.

To the question,

> "How much would you like to continue working on the composition of the group report after you have completed the questionnaire?",

subjects were allowed six choices ranging from (1) "I'd like it very much" to (6) "I'd dislike it." The fourth point, "I would neither like nor dislike it," was neutral. The mean rating given by all subjects was 2.36, which was nearest the second alternative--"I'd like it." To the question,

> "How much would you like to leave the group now to work on an individual study?",

with the same alternatives, the mean rating was 4.32, which though near the neutral point indicated some distaste for leaving the group task. A failure to obtain a stronger statement from the group against leaving to work on the individual study might be an indication of a willingness to abide by the conditions of the experiment.

The question "How much do you like the members of this group?" was a purely "personal attraction" question. On a similar range from (1) "I like them very much" to (6) "I dislike them", the mean rating was 2.68. Fortunately, the exact question was used in an experiment by Festinger, Gerard, et al, (12), where an attempt was made to vary degree of attraction to the group. That experiment was similar in that it also involved a case study and a false consensus. It differed partly in that the groups were smaller. The mean ratings obtained in the Festinger study were 2.21 for the high attraction groups and 3.05 for the low attraction groups. As we can see, the attraction ratings in this study fall in between the two, implying that we did not achieve as great attraction as we might have.

The evidence from these questions seems to indicate a positive attraction toward the group on the part of the individual, though not quite as high as we had hoped. A very high degree of attraction would, by our theory, give us a more clear test of our hypotheses. In all three measures of attraction, no differences were obtained between experimental variations.

2. Effectiveness of Public-Private variation

The Public-Private variation was introduced to allow for measures of distortion and selection of content at both the communicational and cognitive levels. One could not, of course, measure directly the extent to which the cognitive

level is represented in the Private condition. However, we could obtain data bearing on the extent to which the deviate experienced greater group pressure toward uniformity in the Public conditions than in the Private conditions. These data could be obtained from a question on the final questionnaire which asked,

> "How much did you feel that your opinion (as to whether Johnny or his environment was responsible) would affect the degree to which the others in the group would prefer to have you continue working with them on the case study?"

Deviates should consider rejection more likely in the Public conditions than under Private conditions. As we can see from Table 2, this seems to be clearly the case ($p = .04$, by chi-square).

TABLE 2. RELATIONSHIP PERCEIVED BY DEVIATES BETWEEN OWN OPINION AND POSSIBILITY OF REJECTION BY THE GROUP

"How much did you feel that your opinion would affect the degree to which others would prefer to have you continue working with them on the case study?"

	PUBLIC	PRIVATE
"Not at all", "very little"[1]	17	25
"Somewhat"	30	36
"Quite a bit"	28	17
"Very much", "almost entirely"	21	10

Chi-square = 8.66

p = .04

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[1] In this as in all other chi-square tables, categories were collapsed from either extreme until theoretical frequencies were equal to or greater than ten. Figures in Tables 2, 3, 4, 5, and 6 are for subjects still deviate at time they filled out questionnaire.

Conformers showed an opposite tendency ($p = .07$, by chi-square). If the descriptions were to be made public, others in the group would be more likely to know that the conformer's opinion was like their own. Hence, a conformer might reason, this would not be used as a basis for rejecting a conformer from the group.

Another question which was introduced to test the effectiveness of this condition asked,

> "What possibility is there that the other members of the group will find out how you personally feel about this case study?"

When some of the members of the first groups asked for clarification, it was decided to explain to future groups that this applied specifically to their feelings about the responsibility continuum. At first, one might expect that the Public groups would be more likely than the Private groups to answer that there would be considerable possibility that others would find out how they personally feel. Actually the difference was in the opposite direction, though not significant ($p = .20$, by chi-square. See Table 3). This finding does not seem out of line if we accept the assumption that the selection and distortion of content at the communicational, or public level is a conscious process. The deviant subject in the Public condition, knowing that he has in fact deliberately chosen content that does not support his point of view, would not expect the recipient of the communication to get a clear picture of the deviate's position.

TABLE 3. RELATIONSHIP BETWEEN PUBLIC-PRIVATE VARIATION AND PERCEIVED POSSIBILITY THAT OPINIONS WOULD BE MADE KNOWN

"What possibility is there that the other members of the group will find out how you personally feel about this case study?"

	PUBLIC	PRIVATE
"Almost a certainty"	17	25
"extremely likely"	21	25
"very likely"	22	16
"rather likely"	23	14
"not very likely", "very little possibility"	13	7

Chi-square = 6.42

p = .20

3. Effectiveness of the Rejection-Non-Rejection Variation

The subjects were asked,

"How likely is it that the others in the group would prefer that you not continue working with them?"

Table 4 shows the responses to this question by those who were deviates at the time they answered it. The deviates in the Rejection conditions clearly felt that rejection was more likely than did deviates in the Non-Rejection conditions ($p < .0001$, by chi-square). (SEE Table 4, next page.)

The question relating opinion and rejection also showed very large differences. The responses to the question,

"How much did you feel that your opinion (as to whether Johnny or his environment was responsible) would affect the degree to which the others in the group would prefer to have you continue working with them on the case study?"

TABLE 4. RELATIONSHIP BETWEEN REJECTION VARIATION AND PERCEIVED POSSIBILITY OF REJECTION

"How likely is it that the others in the group would prefer that you not continue working with them?"

	REJECTION	NON-REJECTION
"extremely likely", "very likely", "rather likely"	37	7
"as likely as not"	58	22
"not very likely"	4	33
"practically no possibility"	0	22

Chi-square = 80.72

$p < .0001$

TABLE 5. RELATIONSHIP BETWEEN REJECTION VARIATION AND ASSOCIATION OF DEVIANCE IN OPINION WITH REJECTION.

"How much did you feel that your opinion would affect the degree to which others would prefer to have you continue working with them on the case study?"

	REJECTION	NON-REJECTION
"not at all", "very little"	11	31
"somewhat"	31	35
"quite a bit"	31	14
"very much", "almost entirely"	25	5

Chi-square = 28.70

$p < .0001$

are shown in Table 5. The results clearly indicate that where the experimental situation allows for a possibility of rejection, deviates are more likely to see this rejection as related to their opinions than are deviates where rejection is not called for by the experiment.

It is also of interest to note the interaction between the Rejection variation and Public-Private variation. When the written description is to be private, little relationship is seen between rejection and opinion--increased possibility of rejection making for little difference here. When there is no possibility of rejection, there is again little relationship perceived by subjects between their opinion and being rejected--the Public-Private making little difference here. When there is possibility of rejection, the difference between Public and Private conditions is increased. Similarly, when all descriptions are to be made public, the difference between Rejection and Non-Rejection conditions are particularly marked. A chi-square test[1] shows that this interaction effect is significant (See Table 6).

4. Effectiveness of the False Consensus

To test the extent to which the subjects actually accepted the false consensus which was placed on the blackboard, we

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[1] Snedecor (36, p. 200) describes a method for doing a 2x2x2 chi-square to test for this interaction.

TABLE 6. RELATIONSHIP PERCEIVED BY DEVIATES BETWEEN OPINION AND POSSIBILITY OF REJECTION, SHOWING INTERACTION EFFECT OF EXPERIMENTAL VARIATIONS

"How much did you feel that your opinion would affect the degree to which others would prefer to have you continue working with them on the case study?"

	PUBLIC		PRIVATE	
	REJECTION	NON-REJ.	REJECTION	NON-REJ.
"not at all" "very little", "somewhat"	12	35	30	31
"quite a bit", "very much", "almost entirely"	37	11	19	8

2x2x2 chi-square = 4.28
d.f. = 1
p = .05

asked,

> "How much did your first opinion differ from that of the group as a whole?"

The presented group norm was at positions 2 and 3. (See Figure 3). In Table 7, we can compare conformers (who, by our definition, took positions 2, 3, and 4), deviates (who took positions 5, 6, and 7), and controls (who were not given any consensus). As we can see, deviates as compared to either conformers or controls were considerably more likely to say that their opinion differed from the group norm ($p < .0001$, by chi-square).

A significant relationship between perceived possibility of rejection and deviance of opinion is also evident from the answers of subjects to the question,

FIGURE 7. PERCEPTION OF DEVIATION FROM GROUP OPINION

"How much did your first opinion differ from that of the group as a whole?"

	DEVIATES	CONFORMERS	CONTROLS
"none", "very little"	25	38	28
"somewhat"	37	20	23
"considerably"	160	10	4
"extremely"	52	2	0
	274	70	55

Deviates vs. conformers, chi square = 100.94

Deviates vs. controls, chi square = 104.18

$p < .0001$

FIGURE 8. PERCEIVED RELATIONSHIP BETWEEN OPINION AND POSSIBILITY OF REJECTION, COMPARING DEVIATES AND CONFORMERS

"How much did you feel that your opinion would affect the degree to which others would prefer to have you continue working with them on the case study?"

	CONFORMERS	DEVIATES
"not at all", "very little"	20	60
"somewhat"	23	86
"quite a bit"	12	56
"very much", "almost entirely"	5	34
	60	236

chi-square = 14.74

$p = .002$

"How much did you feel that your opinion would affect the degree to which the others in the group would prefer to have you continue working with them on the case?" (See Figure 8).

DATA COLLECTION

1. Data on change of opinion

Three private opinion statements, regarding the extent to which Johnny was responsible for his crime, were obtained from the subjects. One was obtained after the first cursory reading of the case study. The second statement was made after the fictitious consensus had been presented and after a rereading of the case study. The third statement was made after the individual report had been made. Change of opinion, and direction of change (toward or away from the group norm), could be measured through a comparison of these opinion statements.

2. Data on selection and distortion of content

The data on content were obtained from the written individual descriptions. Each description was broken down into a number of meaning units, or items. Each item was now coded in terms of whether it was "positive" or "negative". A "positive" item was one which supported a position on the end of the opinion scale which was favorable to Johnny, i.e., either presented Johnny in a favorable light, or tended to attribute his negative behavior to environmental influences. A "negative" item, in similar fashion, tended to support a position which was unfavorable to Johnny, i.e., the positions

1, 2, or 3 on the opinion continuum (See Figure 1). Thus, "positive" items tended to support the position actually chosen by most of the subjects; "negative" items tended to support the position at the supposed group mode, as presented in the false consensus. A third, residual, category in the content analysis was reserved for items which did not clearly support either end of the scale. For each subject's description we could now calculate a score, a"coefficient of imbalance" (19), which indicated the extent to which the description contained more items supporting one end of the opinion continuum rather than the other. Basically, the calculation consisted merely of subtracting the number of negative items from the number of positive items, then dividing by the total number of items (positive, negative, and neutral).[1] Thus, the greater the coefficient of imbalance (CI), the more positive the content and, among deviates, the greater the number of items supporting the subject's own opinion. The less positive, or more negative, the CI, the more the deviate shows evidence of distorting or selecting content to support the group norm.

After all the individual descriptions had been coded, 33 descriptions were selected for a reliability check. The coder and the writer had worked together in the construction of the criteria for coding and in the practice coding of

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[1] Actually an arc sine transformation was used to make the distribution of scores approach normality. For further details about the content analysis see Appendix B.

preliminary groups. No additional training was therefore necessary for the writer to do the reliability coding. A reliability check of the directional coding ("Positive", "negative", or "ambiguous") of the 777 items in the 33 descriptions showed 79.8% agreement. Of the remaining 20.1% of the items in disagreement, only 2.9% indicated a discrepancy in which one coder coded the item as positive and the other as negative. A product-moment correlation of .84 was obtained in comparing the CI's calculated by the two coders.

We might get a validity check of the content coding by examining the relationship between the individual CIs and the corresponding opinion as checked by the subject. Individuals who took positions more favorable to Johnny--positions 5, 6, and 7--should be expected to give more positive CIs; individuals who were less favorable to Johnny--who chose positions 2, 3, and 4--should have more negative CIs. Of course, this relationship should certainly not be perfect if our theory is correct. Our theory would lead us to expect that with a strong group norm at the negative end of the opinion scale, there should be a greater tendency for the person at the positive position to distort and select his content in the direction of supporting the group norm. However, a reasonably high relationship between opinion and coefficient of imbalance would give some validity to our measuring instrument.

Table 9 shows the relationship between opinion position

taken and CI. We have considered in this table only individuals who did not change their opinion position, in order to hold amount of change constant. The table shows a clear relationship between opinion and CI. Comparing conformers and deviates, we find a four-fold point correlation of .24, maximum $r_{4\text{-fold}}$ obtainable with the given marginal frequencies is .538. The significance of this correlation is tested by the chi-square test and turns out to be quite significant (chi-square = 11.72, with one degree of freedom, p = .001).

TABLE 9. RELATIONSHIP BETWEEN OPINION AND COEFFICIENT OF IMBALANCE

Number above and below the grand median CI.

		COEFFICIENT OF IMBALANCE	
		Above Median[1]	Below Median
OPINION			
Conformers	(2, 3	3	21
	(4	9	11
Deviates	(5	40	35
	(6, 7	46	31
		98	98

chi-square = 16.552

d.f. = 3

p = .001

[1] A CI above the grand median would contain more content which was positive-to-Johnny, supporting positions 5,6, and 7. A CI below the grand median would contain more items which were assumed to be negative-to-Johnny.

A similar analysis, comparing the relationship between opinion after the written description and CI, was made for those subjects who were initially deviate, but who changed their position toward the group. The relationship here was somewhat less strong (chi-square = 5.48, 2 d.f., p = .06).

CHAPTER THREE

RESULTS

TESTING THE HYPOTHESES

Thus far we have developed our theory, stated our hypotheses, and described the operations which we have developed to test these hypotheses. Before presenting our results, it would be well to develop in this section the specific operational predictions which are to test our hypotheses.

Let us review first our operational definitions:

We have operationally defined selection and distortion of content in terms of the amount of content contained in the individual description which supports one end of the opinion continuum rather than the other. Specifically, we have said that the more negative the coefficient of imbalance, the more there is distortion of content in the direction of supporting the negative-to-Johnny end of the scale. We have operationally defined communicated content as that which is included in the descriptions written in Public conditions. Cognitive content has been operationally defined as that content in the individual descriptions written in the Private conditions, where the descriptions would not be seen by anyone else in the group. Possibility

of rejection is obviously varied in the conditions of Rejection and Non-Rejection. Change of opinion is operationally measured by comparison of initial opinion statements with those given later in the session.

It will be noted that our first hypothesis (that under the stated conditions "there will be pressures on the individual, in communicating to the group, to select and distort communicated content in the direction of supporting the group opinion") is not tested directly, but is rather tested through Hypotheses 2 and 3. If we can demonstrate that pressure to distort in the direction of the group norm is increased when there is possibility of rejection, we will also have demonstrated that this pressure exists. Similarly, we will have evidence of the pressures suggested in Hypothesis 1 if we can show that these pressures increase with fear of rejection.

Similar reasoning applies to Hypothesis 2. The crucial test is whether or not Hypothesis 2.3 is true. Hypothesis 2.3 states that "...the content communicated will show the effects of distortion at both the cognitive and communicational levels, and will therefore show more distortion and selection than would be obtained at the cognitive level alone." If we can establish that this is true, we will also have evidence that the distortion occurs in fact at these two levels. In our study, this hypothesis would be supported if we found that CIs of deviates were more negative in the Public conditions than in the Private conditions.

Hypothesis 3 ("These selective and distortive pressures will be increased at both communicational and cognitive levels to the extent that the individual perceives possibility of rejection by the group for deviance."), would be supported if we found that the CIs of deviate subjects in Rejection conditions were significantly more negative than those in the Non-Rejection conditions: That CIs of Public Rejection deviates were more negative than those of Public Non-Rejection deviates, and CIs of Private Rejection deviates were more negative than those of Private Non-Rejection deviates.

With regard to opinion change, we would expect more change of opinion among deviates in the Public conditions than among those in the Private conditions, more in the Rejection conditions than in the Non-Rejection conditions. Also from Hypothesis 4, we would expect more change toward the norm among deviates in the experimental groups than we would among "deviates" in the Control groups where no group norm was presented, since the pressure to change toward the norm should not be present among subjects in the control groups. Similarly, we would expect deviates to change more than conformers.

If we can then support Hypotheses 2.3, 3, 4, 4.1, and 4.2, the other hypotheses would be supported as a consequence. Let us now summarize the operational predictions which would test these hypotheses:[1]

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1 In our discussion of results, data relevant to change of opinion will be discussed first, since opinion change must be held constant in the discussion of content.

SPECIFIC OPERATIONAL PREDICTIONS

1. Subjects who initially hold a deviate opinion will show more change in opinion that will conformers in the experimental groups or subjects with opinions 5, 6, or 7, in the Control conditions. (Hypothesis 4).

2. Deviates in the Rejection conditions will change their opinion more than deviates in the Non-Rejection conditions. (Hypothesis 4.1).

3. Deviates in the Public conditions will change their opinions more than deviates in the Private conditions. (Hypothesis 4.2).

4. The CIs of deviates in the Rejection conditions will be more negative[1] (less positive) than CIs of deviates in the Non-Rejection conditions. This will hold true within both Public and Private conditions. (Hypothesis 3).

5. The CIs of deviates in the Public conditions will be more negative than CIs of deviates in the Private conditions. This will hold true within both Rejection and Non-Rejection conditions. (Hypothesis 2.3).

Note that with regard to both distortion of content and

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[1] The more negative the CI, the more content in the description which is negative to Johnny, hence the more the description tends to support the fictitious group norm. The more positive the CI, the more the description is favorable to Johnny and tends to support the opinion initially taken by the deviate. Hence the more negative the CI, the more evidence of selection and distortion of content by deviates in the direction of supporting the group norm.

private change of opinion, there should be similar ordering of the four experimental variations. Deviates in the Public Rejection condition should change the most and deviates in the Private Non-Rejection condition should change least. Public Rejection deviates should have the most negative CIs and Private Non-Rejection deviates should have the most positive CIs. No prediction is made about the relative ordering of Private Rejection and Public Non-Rejection deviates.

READINESS TO CHANGE ONE'S OPINION

1. Relationship between deviance and change of opinion

As predicted, deviance from a group norm resulted in a greater tendency to change one's opinion toward the group norm. This is evident, first, in a comparison of those deviates in the experimental conditions with those individuals in the control conditions who held identical opinion positions. We remember that "deviates" are, by definition, those who took positions 5, 6, or 7 in the experimental conditions. A false consensus at positions 2 and 3 indicated to these people that they deviated sharply from a group norm. The control group received no such false consensus. In Table 10, we see a comparison of people in the control and experimental groups, all of whom held an opinion which was positive to Johnny. The deviates in the experimental groups were much more likely to change their opinions toward the supposed

group norm. ($p = .004$ point, by chi-square).[1]

Also, we predicted that deviates should change more than conformers, as the result of pressures toward uniformity. If no such group pressures were operative, we would expect no difference in tendency to change opinion. A conformer (whom we define as being initially at position 2, 3, or 4) would be just as likely to shift toward a position at 5, 6

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[1] The question as to the conditions under which a one-tail test of significance is applicable is still a matter of controversy (9, 18, 20, 27). In this study, where the results discussed are evidence for directional hypotheses formulated in the original theory (i.e., the null hypothesis is that $(M_1 - M_2 \geq 0)$), the one-tail test will be used. While the dangers mentioned by Hick (18) should not be ignored, a major consideration here was the expectation that this study would become part of a system of experimental work in this area, rather than a definitive experiment whose findings would be accepted without further test. The insistence upon a rigid .05 level of significance as grounds for accepting a difference as not due to chance would stifle further investigation. In every case where a one-tail test is used here, this will be clearly stated. We will here adopt the convention suggested by Edwards (9, p. 79) of referring to the significance standard of .05 for a one-tail test, involving a directional prediction, as the 5 per cent point. We will reserve the 5 per cent level for the two-tail test. In addition, whenever tables permit, the significance points for the one-tail test will be carried out to an additional decimal place. This will be done for two reasons: first, to help emphasize the fact that the figure quoted is from a one-tail test, and second, to satisfy aesthetically those who would insist on a rigid, two-tail, level of significance. To get the two-tail level, they need merely double the figure quoted. It should be noted that the usually stated probability values of chi-square with one degree of freedom are identical with the probability values of a two-tail t-test with infinite degrees of freedom (9, p. 79). To get a one-tail test for this chi-square, we have usually taken the square root of chi-square and looked in a t-table for a one-tail test. This is more accurate than dividing the value found in a chi-square table by two.

TABLE 10. FREQUENCY OF CHANGE IN OPINION

(COMPARING "DEVIATES"[1] IN EXPERIMENTAL AND CONTROL GROUPS)

	Changers toward Position 2	Non-Changers	Changers toward Position 7
Control	6	33	5
Experimental	89	168	16

(Combining non-changers and changers away)
chi-square = 6.493
p = .004 point

or 7, as a deviate (already at 5, 6, or 7) would be to shift in the opposite direction. As we can see from a comparison of first and final statements (Table 11), conformers, when they do change, are just as likely to change in one direction as another. Deviates are much more likely to change toward the group norm (p = .001, by chi-square).

It is significant to note that all these changes in opinion occurred in the absence of direct influence attempts and even though it was never necessary for a subject to specifically state his opinion to others in the group.

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[1] Subjects in this table all initially chose positions 5, 6, or 7. In experimental groups, a change by a deviate toward position 2 is a change toward the norm. The terms "norm" and "deviate" are not really applicable for subjects in the Control groups, where no norm was presented.

TABLE 11. FREQUENCY OF CHANGE IN OPINION

(COMPARING DEVIATES AND CONFORMERS IN EXPERIMENTAL GROUPS)[1]

Initial Position	Changers toward Position 2	Non-Changers	Changers toward Position 7
Conformers (2, 3, or 4)	12	46	12
Deviates (5, 6, or 7)	89	168	16

Chi-square = 12.237

p = .001 point

2. Effect of the experimental variables on change of opinion

On the theory that with greater pressure toward uniformity there should be more change, we predicted that where there was possibility of rejection for deviance (as in the Rejection conditions) deviates would be more likely to change their opinions toward the group norm. (Hypothesis 4.1). They should also have been more likely to change the more they were required to communicate openly about the object of

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1 We again emphasize that the terms "conformers" and "deviates" are defined in terms of the opinion positions taken prior to knowledge of the group norm. "Conformers" does not refer to individuals who, seeing the group norm, took positions which conformed to that norm. "Deviates" does not refer to individuals who, seeing the group norm, took positions which deviated from that norm. The terms used for these individuals will be, respectively, "changers toward the norm" and "changers away from the norm."

opinion--they should change more in the Public conditions than in the Private conditions. (Hypothesis 4.2) For a comparison of the four experimental variations in terms of number of deviates who changed their opinion at each of the opinion statements, and the direction of change, Table 12 presents an overall picture. The frequencies from this table are combined in various ways in Tables 13, 14, and 15 to demonstrate various relationships more clearly. (SEE Table 12, next page.)

TABLE 13. FREQUENCY OF CHANGE IN OPINION

(COMPARING DEVIATES IN THE FOUR EXPERIMENTAL CONDITIONS BY THEIR FIRST AND THIRD OPINION STATEMENTS)

Condition	Proportion changers toward norm	Changers toward norm	Non-Changers	Changers Away from Norm
1. Public Rej.	.41	30	41	2
2. Priv. Rej.	.30	23	47	6
3. Pub. Non-Rej.	.36	24	39	4
4. Priv. Non-Rej.	.17	12	41	4

Note:- Significance points of differences between proportions of changers toward norm: 1 vs 2 ($p = .083$); 3 vs 4 ($p = .032$); 1 vs 3 ($p = .259$); 2 vs 4 ($p = .116$); 1 vs 4 ($p = .008$); 1, 2, 3, vs 4 ($p = .018$).

In Table 14, we see that there is a greater tendency for deviates to change toward the norm if there is a possibility of rejection from the group, though the differences between

TABLE 12. FREQUENCY OF CHANGE IN OPINION

(COMPARING DEVIATES IN THE FOUR EXPERIMENTAL CONDITIONS; CHANGES AT SECOND AND THIRD OPINION STATEMENT)

Condition	a Changers toward norm	b Non-Changers	c Changers away from norm	d Changers toward then away	e Changers away then toward
1. Public Rejection*	28	38	2	3	2
2. Private Rejection	22	42	6	5	1
3. Public Non-Rejection	22	36	4	5	0
4. Private Non-Rejection	12	36	3	5	1

a. Includes all subjects who changed their opinion toward conformity with the group norm, either changing on their second and/or third opinion statement, but never changing so as to increase their distance from the group opinion.

b. Includes all subjects who did not change their opinions throughout the experiment. The similarity of N's or non-changers in the four conditions is due to an initial plan to use non-changers for most of the analysis. To keep N's similar, a running count of non-changers was kept and enough groups run in each condition to maintain this similarity of N's.

c. Includes all subjects who, on either their second and/or third opinion statement, changed their opinion so as to increase their distance from the group norm, but did not change toward the group norm.

d. Subjects who changed toward the group norm on their second opinion statement, then changed away from the group norm on their third statement.

e. Subjects who changed away from the group norm on their second statement, then changed toward the group norm on their third statement.

*Figures for Public Rejection conditions do not include one individual who, after seeing the false consensus, refused to state an opinion on the continuum.

Rejection and Non-Rejection conditions are not very great. (p = .126 point). The difference between the Public and Private conditions is more significant (p = .015 point, see Table 15), deviates showing a much more clear tendency to change toward the group norm where their descriptions of the case study will be seen by other members of the group. The difference is most marked when we compare the extremes of the four experimental variations. The Public Rejection condition, where all descriptions were to be made public and

TABLE 14. FREQUENCY OF CHANGE IN OPINION

(COMPARING DEVIATES IN REJECTION AND NON-REJECTION CONDITIONS)

Condition	Proportion changers[1] toward norm	Changers toward norm	Non-changers and changers away from norm
Rejection	.35	53	96
Non-Rejection	.29	36	88

Chi-Square = 1.317

p = .126 point

there was a possibility of rejection, showed much more change toward the norm than did the Private Non-Rejection condition, in which all written descriptions would be private and there would be no possibility of rejection (p = .008 point, see Table 13).

We might have expected that there would be interaction

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[1] Comparison by change from initial to final statement of opinion.

TABLE 15. FREQUENCY OF CHANGE IN OPINION

(COMPARING DEVIATES IN PUBLIC AND PRIVATE CONDITIONS)

Condition	Proportion changers toward norm	Changers toward norm	Nonchangers and changers away from norm
Public	.39	54	86
Private	.26	35	98

Chi-square = 4.662

p = .015

between the Public-Private and the Rejection-Non-Rejection variations. The possibility of rejection would be more effective in producing change where descriptions were to be made public. This expectation was not supported. Any interaction which occurred, seemed, in fact, to be in the opposite direction, with greater differences between Rejection and Non-Rejection conditions occuring in the Private condition. The difference was not great, however, and significant at only the .180 level.[1] The outstanding point, and possible clue to a decreased interaction in the Public conditions, is the fact that the Private Non-Rejection condition showed less change toward the norm than any of the other conditions (p = .018 point). This might suggest that both publicity and possibility of rejection substantially increase the tendency to change toward the norm, but the increased tendency to change as a function of group pressures rapidly approaches an asymptotic limit when both pressures are operating.

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[1] Using a 2x2x2 chi-square (38, p. 200).

In our consideration of change of opinion, our predictions seem, generally, to hold up. Our first prediction, that deviates would change more than conformers or controls, received the strongest support ($p = .001$ and .004 points, respectively). Our second prediction, that deviates in the Rejection conditions would change more than those in the Non-Rejection conditions was not well-supported, though the differences were in the right direction ($p = .126$ point). The prediction that there would be more change in the Public conditions than in the Private conditions received strong support ($p = .015$ point). The predicted ordering of the four experimental variations was obtained with the Public Rejection condition significantly different from the Private Non-Rejection condition ($p = .008$ point). In all cases, opinion change occurred despite the fact that subjects were well aware that they would not have to openly state their opinions to the other members of the group, though they might be required to communicate about the object of opinion.

3. Relationship between opinion change and opinion scale position.

While discussing opinion change, we might bring in a serendipitous finding, which, though not originally predicted in our original hypotheses, will assume some importance in understanding data which we will present later. This is the relationship between opinion change and opinion scale position.

Studies of attitudes have presented evidence which seems to relate intensity of attitude with the scale position of the attitude. Cantril (6) asked respondents to indicate their opinions on a scale of attitude toward government regulation of business, then asked them to rate "How strongly do you hold this opinion?" on a five-point scale. Plotting intensity against scale position, he found a U-curve. He concluded that the more extreme an attitude in its direction, the more intensely it is likely to be held. Guttman and Suchman (17) have adopted intensity as a means of establishing the zero-point of an attitude. Plotting intensity against scale position, as Cantril did, Guttman and Suchman define as a zero-point, on the attitude scale, that point where intensity is least. Krech and Crutchfield (22) attempt to conceptualize the zero-point of an attitude as having something of the character of a point of unstable equilibrium. If this is the case, then we might expect that group pressures might be more effective upon individuals the closer they are to the zero-point. Kelly and Volkart (21) also noted this "zero-point" where intensity of attitude was weak, as compared to extreme attitudes which were more intense and resistant to change. They relate the scale position to cross-pressures from various reference groups. The individual with an attitude at the zero-point would have equal pressures to take positions at either extreme.

If the above considerations hold true, we would expect that, in this experiment, deviates who held position 5 would

be more likely to change their opinions in response to group pressures than would those who held opinions at positions 6 or 7. (This would not apply to individuals at position 4, who being adjacent to the norm would not really be deviates.) As we can see in Tables 16 and 17, this was indeed the case. The tendency for those at position 5 to change, as compared

TABLE 16. FREQUENCY OF CHANGE IN OPINION
(COMPARING EXTREME AND LESS EXTREME DEVIATES)

Initial opinion position	Changers toward norm	Non-Changers
5	47 (36.86)[1]	75 (85.14)
6, 7	37 (47.14)	77 (66.86)

Chi-square = 7.716

p = .006 level

to those subjects at 6 and 7, is considerably greater than chance, being significant at less than the .01 level (see Table 16). If we examine the number of positions changed by those who did change, we get even more clear-cut differences (p = .002, by chi-square, see Table 17).

This evidence seems clear--that subjects with extreme

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1 Theoretical frequencies are made to take into account the fact that people at position 5 could change only three positions toward the group norm, while those at positions 6 and 7 can change four and five positions respectively, since the group norm was at position 2. There could be little justification for choosing position 1 as the extreme point to which deviates could change. However, if theoretical frequencies were calculated on this basis, chi-square = 4.81, p = .01 level.

opinions were less likely to change toward the group norm in response to pressures toward uniformity.

TABLE 17. AMOUNT OF CHANGE IN OPINION TOWARD NORM
(COMPARING EXTREME AND LESS EXTREME DEVIATES)

	Number of positions changed			
Initial position	1	2	3	4
5	17	16	1	0
6	25	3	1	1
7	5	0	0	0

Note:--Combining frequencies of change by subjects at positions 6 and 7, collapsing the table horizontally to combine number of subjects who changed 2, 3, and 4 positions, Chi-square = 10.129, 1 d.f., p = .002 level. Since the differences were so clearly marked, no correction was made in theoretical frequency to account for the fact that 6's and 7's could actually change more positions.

SELECTION AND DISTORTION OF CONTENT

We have predicted that there would be greater distortion and selection of content, in the direction of supporting the group norm, among those deviates who feared rejection than among those who did not fear rejection from the group. (Hypothesis 3). There should also be more such pressure to distort content at the communicational level than at the cognitive level. (Hypothesis 2). The deviates in the Public conditions should then show more distortion and selection

than those in the Private conditions; they should have CIs which are more negative and less positive. The deviates in the Rejection conditions should show more distortion and selection than those in the Non-Rejection conditions; they should show more negative CIs. Thus CIs should be most negative among the Public Rejection deviates, most positive among the Private Non-Rejection deviates.

In presenting the data which test these predictions, we shall adhere to the general course which was followed in the actual analysis. In our analysis, we first singled out those deviates who changed toward the norm. We then examined only those deviates who did not change, to get a conservative comparison of conditions, holding opinion change constant. Finally, we separately considered those individuals who held each position at the final opinion census, to keep opinion position constant.

In testing our hypotheses, it would not be correct to test all those who were initially deviant, since these hypotheses about content were so formulated as to predict behavior only at the time the individual is a deviate. Accordingly, it would not apply to descriptions written by individuals after they had changed their positions so as to conform completely with the group norm. When individuals have changed to the norm, different pressures might now operate. Thus, we have considered here only those individuals who were still deviates at the time that the final statement of opinion was made. Following the same rationale, this

still excludes a small number of individuals who changed to conformity at the second opinion statement.

We might obtain a general test of our predictions (that as a result of different experimental conditions, pressures to distort content vary) by examining those subjects initially deviant who changed their opinion toward the norm, but not enough to achieve complete conformity.[1] Since we have already seen that there is a relationship between opinion held and CI (see p. 70), both differential opinion change among conditions and differential distortion and selection of content would be represented in an analysis of these subjects. First, due to differential pressure to change, the Public Rejection condition, for example, would here include a greater proportion of subjects at position 5 than would be included in the other conditions. These subjects would by that fact make the mean of the Public Rejection condition more negative. Secondly, even after they have changed their opinions, pressures toward uniformity would still be operative, and in accordance with our hypotheses, there should be differential pressure to select and distort content to support the group norm. A comparison of these subjects then provides a global test of all four hypotheses, and the prediction would be that the differences here, with respect to content, would be especially marked, representing

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[1] This would include subjects initially at position 6 who changed to position 5, and subjects initially at position 7 who changed to either position 5 or 6.

both differential opinion change and differential pressure to select and distort content.

As we can see, from Tables 18a and 18b, the differences between means for all conditions are in the predicted direction. The N's are quite small, however, and consequently these differences do not approach the usual acceptable significance levels. The Rejection conditions showed especially more distortion and selection toward the group norm, having more negative mean CIs than the Non-Rejection conditions. Non-Rejection conditions had more positive content than negative content in their descriptions (as shown by the positive CIs). The difference between Rejection and Non-Rejection conditions (Table 18b) is significant by t-test at the .068 point, despite the small N's. The difference between Public and Private conditions, though in the predicted direction, is not so significant (p = .300 point).

To test specifically our hypotheses about content selection and distortion, we would want to hold opinion change constant in some way. In our original plan of analysis, we had planned to concentrate mainly on deviates who had not changed their opinion throughout. This would give us a conservative test of our hypothesis. It would be conservative because, as noted in the section on change, the relationship between pressures to change opinion and actual opinion position held vary with the experimental condition. As a result of this differential change, the

TABLE 18a. MEAN COEFFICIENTS OF IMBALANCE FOR DEVIATES WHO CHANGED PART-WAY TOWARD THE NORM[1]

(COMPARING THE FOUR EXPERIMENTAL CONDITIONS)

Condition	Mean CI[2]	N
1. Public Rejection	-2.92	12
2. Private Rejection	-1.26	7
3. Public Non-Rejection	5.01	10
4. Private Non-Rejection	18.57	3

Note.--Significance points of differences between conditions are calculated by the Pitman Randomization[3] test: 1 vs 4 ($p = .114$); 3 vs 4 ($p = .185$); 2 vs 4 ($p = .158$); 1 vs 3 ($p = .130$ by t-test).

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[1] Included in this table are all subjects who initially took positions at 6 or 7, but who changed their positions during the course of the experiment so that in the final consensus they had taken positions at either 5 or 6. It does not include subjects who changed their position at any time so as to increase their distance from the normative opinion.

[2] The more positive the CI, the more content in the individual descriptions which supported the "positive-to-Johnny" end of the scale. A negative CI indicates that the number of coded items "negative to Johnny" was greater than those which supported Johnny. The false consensus indicated that practically all members of the group had taken opinion positions "negative to Johnny".

[3] The Pitman Randomization test, described by Smith (37), is a widely applicable non-parametric test which is extremely difficult to compute except with very small samples. It tests the hypothesis that both samples come from the same population, assuming that, if such is the case, the splitting of the sample into two groups is merely a matter of chance. It then offers a method of calculating directly the probability of obtaining by chance a difference in means as large as that obtained.

TABLE 18b. MEAN COEFFICIENTS OF IMBALANCE FOR DEVIATES WHO CHANGED PARTWAY TOWARD THE NORM.

(COMPARING THE TWO EXPERIMENTAL VARIATIONS)

VARIATION	Mean CI	N
Public (1 + 3)	.69	22
Private (2 + 4)	4.69	10
	p = .300 point, by t-test	
Rejection (1 + 2)	-2.30	19
Non-Rejection (3 + 4)	8.14	13
	p = .068 point, by t-test	

experimental conditions where rejection is possible, and/or descriptions are made public will include a disproportionate number of non-changers at positions 6 and 7. This difference is obvious from Table 19. Since opinion is related to CI,

TABLE 19. NUMBER OF NON-CHANGING DEVIATES AT EACH OPINION POSITION

(COMPARISON OF EXPERIMENTAL CONDITIONS)

Condition	Position	
	5	6,7
1. Public Rejection	17	21
2. Private Rejection	25	17
3. Public Non-Rejection	19	17
4. Private Non-Rejection	14	22

the non-changing deviates in the Public Rejection condition, to have the predicted negative CI, would have to overcome the strong tendency to write positive content corresponding

to their disproportionately extreme position. We had hoped that our experimental operations were such that pressures to distort toward the group would overcome this tendency. Table 20 shows that this was not the case. The extremely low average CI for the Public Non-Rejection conditions, relative to the others is especially surprising. The difference between Public Non-Rejection and Private Non-Rejection conditions is significant at the .011 point. However, this difference may reflect a difference in variance--the variance of the Public Non-Rejection condition is also significantly greater ($p = .05$ by F-test). It would seem that factors other than the unequal representation of individuals at positions 6 and 7 must account for the result. We shall attempt to explore some of these factors in the paragraphs which follow.

In the initial theoretical formulation, pressures to

TABLE 20. MEAN COEFFICIENTS OF IMBALANCE FOR DEVIATES WHO DID NOT CHANGE THEIR OPINION

Condition	Mean CI	N
1. Public Rejection	8.14	38
2. Private Rejection	8.69	42
3. Public Non-Rejection	.65	36
4. Private Non-Rejection	9.21	36

Note.--Significance of differences by t-test: 3 vs 4 ($p = .011$ point); 1 vs 3 ($p = .06$ level); 2 vs 3 ($p = .07$ level). However Public Non-Rejection was also more variable than any other condition ($p < .01$ by F-test).

change one's own opinion were emphasized, as well as corresponding pressures toward distorting related content in the direction of the group norm. This, however, did not preclude the consideration of counter-pressures toward uniformity--pressures acting on the deviate to influence the others to change their opinion toward his own, or, stated differently, pressures to justify his own deviate opinion to others in the group. Just as pressure to change carries with it corresponding pressures to select and distort content toward the group norm, pressure to influence carries with it pressures to communicate and perceive content supporting one's own position. These pressures to influence others were considered in the early formulation of this problem. It was expected that pressures to influence would more likely occur where there was less relative involvement in the group opinion and more involvement in own opinion. It was thought that, in this study, the strong attraction to the group and the strength of the group consensus would be great enough to minimize these counter-pressures. We have noted, however, that the degree of attraction to the group which we had created was not quite as great as that obtained in high attraction groups in other experiments.

Bearing in mind the above, we may attempt a reformulation based on the data which we have considered thus far. We recognize that there are two sorts of pressures acting on the deviate --a pressure to change toward the group and a pressure to attempt to influence others to change toward his

own opinion position. In our theoretical section we attempted to relate the manifestations of pressure toward uniformity with pressures to select and distort content. Corresponding to pressure to change one's opinion, there is a pressure to select and distort content in the direction of supporting the group norm. Corresponding to pressure to influence, there is a pressure to select and distort content to support the deviate's own position. We also noted that pressure to influence others, as opposed to pressure to change, would increase with the intensity with which that opinion is held. We have pointed to evidence that this intensity increases with the extent that the initial opinion is anchored either in personal needs or in other reference groups. Furthermore, the stronger the pressure toward uniformity, the stronger its manifestations, either in pressure to change or in pressure to influence. Thus, threatened rejection by the group for non-conformity will increase the individual's tendency to defend his own position to the extent that pressure to influence is dominant. It will increase the individual's tendency to change toward the group or communicate content supporting the group norm to the extent that pressure to change is dominant. Individuals who were highly involved in their own opinions would then be less likely to behave according to our predictions. We have already found that this was true with respect to their tendency to change, though not enough to negate our predictions. We noted that individuals who held extremely deviate opinions

were less likely to change and we attributed this to their greater involvement in or intensity of opinion. Now we might expect the same tendency on the part of the extremes--the tendency to be more subject to pressure to influence rather than pressure to change--to also hold true for pressures to select and distort content. This would then explain why those deviates who were extremely different from the group, who feared rejection, and who were especially involved in their own opinion (did not change their opinion) would communicate more material supporting their own opinion than material supporting the group norm--it would offer an additional explanation for the fact that our predicted differences did not hold true for deviate non-changers.

How then can we test this reformulation, to determine whether our predictions were not supported in data from non-changers because these non-changers were so involved in their own opinion? We can do this by examining the data from subjects who were less involved in their own opinion and relatively more involved in the group opinion. The data from such individuals would be expected to more clearly support our predictions.

The condition of less involvement in own opinion would seem to be fulfilled in individuals who changed their opinion toward the group norm. These individuals would by definition be less involved in their own opinion. As we have seen, those deviates who changed toward the group norm had CIs which were in line with our predictions. However, these data were

not clearly a measure of pressures to distort and select content to support the group norm. They also included the effects of the differential change in position resulting from experimental manipulations.

A second class of subjects who would seem to be less involved in their own opinion, relative to the group opinion, would be the subjects at position 5. Our data on change of opinion showed quite dramatically that they were much more likely to change their opinion than were the deviates at the more extreme positions. Furthermore, by separately considering those subjects, initially deviate, who held position 5 at the final consensus, we would also hold constant the disproportionate representation of opinions which we found in Table 19. These deviates should then give us a clearer test of our hypotheses.

As we see in Tables 21a and 21b, the data from people who held position 5 at the final census tend to support our initial predictions. The differences between extreme conditions, Public Rejection and Private Non-Rejection is significant at the .025 point. The Private Non-Rejection condition uniformly has a higher coefficient of imbalance than any of the other conditions. Comparing the variations separately, deviates in the Public variation show more distortion and selection of content than those in the Private conditions ($p = .047$ point, see Table 21b). However, we note that a good part of this difference occurs in the Non-Rejection variation, the difference between Public

TABLE 21a. MEAN COEFFICIENTS OF IMBALANCE FOR DEVIATES WHO HELD POSITION 5 AT THE FINAL OPINION STATEMENT (COMPARING THE FOUR EXPERIMENTAL CONDITIONS)

Condition	Mean CI	N
1. Public Rejection	.85	28
2. Private Rejection	4.73	31
3. Public Non-Rejection	1.42	28
4. Private Non-Rejection	12.30	17

Note:--Significance points, by t-test: 1 vs 2 (p = .232); 1 vs 4 (p = .025); 2 vs 4 (p = .113); 3 vs 4 (p = .027).

TABLE 21b. MEAN COEFFICIENTS OF IMBALANCE FOR DEVIATES WHO HELD POSITION 5 AT THE FINAL OPINION STATEMENT (COMPARING THE TWO EXPERIMENTAL VARIATIONS)

Condition	Mean CI	N
Public (1 + 3)	1.13	56
Private (2 + 4)	7.42	48
Significance point, p = .047, by t-test		
Rejection (1 + 2)	2.89	59
Non-Rejection (3 + 4)	5.53	45
Significance point, p = .244, by t-test		

Non-Rejection and Private Non-Rejection conditions being significant at the .027 point. The difference between the Rejection and Non-Rejection variations is in the right direction, but is significant at only the .244 point.

With an examination of those subjects who, we have good reason to believe, were even less involved in their own opinion, relative to the group opinion, we should find even more clearcut results in the predicted direction. There

should be even less involvement in opinion among those individuals whose final opinion was position 5, but who had changed to that opinion from a more deviate opinion. Table 22, which is a breakdown from Table 21, shows the mean CIs of those deviates who were initially at positions 6 or 7, but who changed to position 5 by the final consensus. Though the N's are reduced so as to make difficult the obtaining of differences which are significant at the conventional levels, the effects of the experimental conditions seem more impressive when considered in conjunction with other data. In every case, the differences are in the right direction, though the only difference approaching the usually acceptable significance point is the difference between the Rejection and Non-Rejection variation ($p = .089$ point).

Another check of the explanation of our failure to obtain predicted differences in extreme deviates might come from an examination of the control groups.[1] Since there was no pressure toward uniformity acting on "deviates" (subjects at positions 5, 6, and 7) in the control groups, we might expect that their CIs would be more positive--supporting their initial positions. Actually, the mean CI (1.23) for individuals who held deviate positions in the control groups was less positive

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[1] In addition to the somewhat different condition under which control groups met and their smaller N, another factor makes the content data from these groups subject to question. The content analysis of the control groups was not completed until several months after the experimental groups. This suggests a possibility of a constant bias on coding in these groups.

TABLE 22a. MEAN COEFFICIENTS OF IMBALANCE FOR DEVIATES WHO CHANGED TO POSITION 5 FROM A MORE EXTREME POSITION

(COMPARING THE FOUR EXPERIMENTAL CONDITIONS)

Condition	Mean CI	N
1. Public Rejection	-4.57	11
2. Private Rejection	.05	6
3. Public Non-Rejection	3.51	9
4. Private Non-Rejection	18.57	3

Note:--Significance points: 1 vs 4 ($p = .115$, by Pitman Randomization test); 1 vs 3 ($p = .142$ by t-test)

TABLE 22b. MEAN COEFFICIENTS OF IMBALANCE FOR DEVIATES WHO CHANGED TO POSITION 5 FROM A MORE EXTREME POSITION.

(COMPARING THE TWO EXPERIMENTAL VARIATIONS)

Condition	Mean CI	N
Public (1 + 3)	-.94	20
Private (2 + 4)	6.22	9

Significance point, $p = .184$ by t-test.

Condition		
Rejection (1 + 2)	-2.94	17
Non-Rejection (3 + 4)	7.27	12

Significance point, $p = .089$ by t-test.

than that of comparable experimental deviates (5.92). The variance of the deviates in control groups was greater than the variance of experimental groups ($p = .05$, by F-test). This difference might reflect decreased variance in

experimental groups as the result of pressure toward uniformity, or increased variance in control groups arising from less reliability in coding, the control group data having been coded over a longer period of time.

We might also note (Table 23), that the difference between those individuals at position 5 and those at positions 6 and 7 is greater in the experimental groups than in the control groups. Experimental deviates at position 6 and 7 felt especially called upon to support their own opinion. This fact seems more conclusive when we consider that it is the controls that are more variable. The data from the control groups points out then the greater pressure to influence which may arise from pressure toward uniformity in experimental conditions.

TABLE 23. MEAN COEFFICIENTS OF IMBALANCE FOR INDIVIDUALS AT POSITIONS 5, 6, and 7

(COMPARING EXPERIMENTAL AND CONTROL GROUPS)

Position[1]	Experimental	Control
5	4.03	.34
6, 7	8.62	1.99
TOTAL: (5, 6, 7)	5.92	1.23

Note:--Variance of control groups is greater than the variance for experimental groups ($p = .05$, by F-test).

Let us review our findings on content. Our predictions were that (1) the CIs of deviates in the Rejection conditions

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[1] Position held at third opinion statement.

would be more negative than CIs of deviates in the Non-Rejection conditions, and that (2) the CIs of deviates in the Public conditions would be more negative than CIs of deviates in the Private conditions. The predicted ordering of the four conditions would place the Public Rejection condition as most negative in mean CI and the Private Non-Rejection condition as most positive.

We first examined those deviate changers who had not changed to complete conformity (p. 77). The ordering was as predicted, and the differences in the predicted direction, but, due in part to small Ns, only the difference between the Rejection and Non-Rejection variation approached the .05 point of significance ($p = .068$ point). Furthermore, the differences obtained did not distinguish between content distortion corresponding to differential change of opinion and that due to differential pressure toward uniformity with actual change held constant.

A consideration of those deviates who did not change their opinion throughout the experiment was to give us a more conservative test of these hypotheses, holding opinion change constant (p. 79). Due in part to differential representation of opinions in the four conditions, in part, we suspect, to the greater involvement of these subjects in their own opinion, differences were not in the predicted direction. The Public Non-Rejection groups, without clear reason, had CIs which were considerably lower than any of the others and were significantly more variable.

In order to hold opinion position constant, we examined those deviates who held opinion 5 (p. 84). We expected that our hypotheses would more likely hold true for these people since, by virtue of their less extreme opinion, they should hold that opinion with less intensity. We found, in fact, that the predicted ordering did obtain, with the CIs of the Public Rejection condition being significantly more negative than those of the Private Non-Rejection condition ($p = .025$ point). The Public conditions were more negative than the Private conditions ($p = .047$ point), this difference being especially marked between Public Non-Rejection and Private Non-Rejection conditions ($p = .027$ point). The differences between the Rejection and Non-Rejection conditions were not nearly as great ($p = .244$ point).

To follow out our notion that our hypotheses would be more likely to hold true the less the individual is involved in his own opinion, we examined now the deviates at position 5 who had changed to that position from a more extreme position (p. 86). The magnitude of the differences in means was even more sharply in the right direction for these deviates, but the Ns were too small to obtain significant differences. The differences in means between Rejection and Non-Rejection conditions was great enough so that this difference was especially significant, as compared to other conditions ($p = .089$ point).

On the basis of the data just presented, it would seem presumptuous to claim conclusive proof for the related

hypotheses regarding content. However, with each successive exclusion of deviates, who, it would seem, had strong anchorage in their initial opinion, we found results more clearly in line with our predictions. We would seem justified in expecting to find more significant differences in the predicted direction in a situation which more nearly approximated the necessary conditions stated in our original theory.

RELATIONSHIP BETWEEN OPINION CHANGE AND CONTENT

No specific hypotheses were formulated prior to the experiment regarding the relationship between opinion change and distortion of content toward the group norm. Such a relationship would seem to follow from some of our initial discussion, since we have said that the same situation which leads to pressure to change should also lead to pressure to distort content toward the norm. Furthermore, we might expect that pressures operating to distort content during the actual writing of the description might result in a change of opinion toward a position supported by the distorted content. While writing his description, the deviate under pressure to select content favoring the group norm, would selectively remember those items which he felt free to write. When he had finished writing, he would remember a greater number of items supporting a position more like the group norm than that which he had held. The change in opinion which resulted would, in effect, function to reduce the discrepancy

between content and opinion.

To investigate this suggestion, we first calculated the mean CIs of all individuals who were still deviate just prior to the writing of the individual description (as measured by the second opinion statement). The mean CI was calculated separately for each position--5, 6, and 7--for all individuals who did not change their positions between the second and third statement. Seventeen subjects had changed toward the norm between the second and third opinion statement--four from position 6 and thirteen from position 5. (See Table 24). If their change in opinion were not related to the description which they wrote, we would expect that the CIs of these individuals would distribute themselves about the mean of the non-changers who held the same opinion position. The null hypothesis was, then, that these deviates who changed opinions

TABLE 24. RELATIONSHIP BETWEEN COEFFICIENT OF IMBALANCE AND CHANGE OF OPINION WHILE WRITING DESCRIPTION

Position before change	Mean CI of those not changing	Frequency of CI relative to mean CI of those not changing: more negative	more positive	total
5	4.27	11	2	13
6	14.52	4	0	4
		15	2	17

Note:--From binomial expansion, probability of obtaining 15 out of 17 by chance, p = .002 level.

while writing their descriptions would be equally likely to have CIs which were more positive or more negative than the

CIs of those who did not change. Actually fifteen of these seventeen changers had CIs which were more negative (supportive of the group opinion) than the mean of the individuals who shared their opinion at the second opinion census. The difference between this figure and a chance 50-50 split is significant at the .002 level. The result of the opinion change from the second to the third statement was to bring the opinion more in line with the content in the description.

CHAPTER FOUR

SUMMARY AND DISCUSSION

SUMMARY OF THIS STUDY

In this study we wished to re-examine and test derivations from findings of earlier studies in social influence and communications. We examined the tendencies on the part of the deviate to change his opinion or distort the content which he communicated to other members of his group. Specifically, our focus was on a situation where pressure toward uniformity would manifest itself in pressures on the deviate to change his opinion, rather than to attempt to achieve uniformity by influencing others or by rejecting those who were most different from him.

Groups of subjects read a juvenile delinquency case and gave their opinion about the extent to which the delinquent, Johnny, was personally responsible for his crimes. Most subjects took an opinion position which was positive to Johnny--rating the environment as responsible for his crime. A false consensus indicated to these people that they were deviant from a group normative opinion which was negative to Johnny. To measure change of opinion, subjects were asked to state their opinion two additional times during the course of the experimental session. It was predicted that,

despite the fact that there was no direct influence attempt from others in the group, and despite the fact that at no time was it necessary that the subject's opinion be specifically made public, deviates would still tend to change toward the group norm (Hypothesis 4, p. 17). Comparison of deviates with conformers and with subjects in control groups who had received no indication of the group norm, strongly supported this prediction ($p = .001, .004$ respectively).

Eventually, the group expected to write a group description of the case. However, first, each member was to write an individual description. Four variations were here introduced: Public Rejection, Public Non-Rejection, Private Rejection, Private Non-Rejection. In the Public conditions, the individual descriptions were to be seen by all members of the group, while in the Private conditions no other members were to see the individual descriptions. In the Rejection conditions the group was to have the opportunity to reject members who were deviant; in the Non-Rejection conditions everyone was to continue working with the group.

As we predicted, (Hypothesis 4.2, p. 18), deviates changed more in the Public conditions, where there was more possibility that their opinion would become known through the content of their descriptions ($p = .015$ point). They also tended to change more in the Rejection conditions, where there was greater group-imposed pressure toward uniformity, than in the Non-Rejection conditions (Hypothesis 4.1, p. 18 , $p = .126$ point). Public Rejection groups were

especially more likely to change than Private Non-Rejection groups ($p = .008$ point).

From the individual descriptions we could get a measure of the effect of group pressures on content. The content was coded in terms of the number of items supporting the group opinion, as compared to the number of items supporting the opinion taken initially by the deviate. In all experimental conditions, we predicted that there would be pressure on the deviate to distort and select content to support the group norm. (Hypotheses 1, 1.1, 1.2, 1.3, p. 16).

The Public conditions were to offer a measure of distortion and selection of content communicated; the Private conditions were to indicate distortion at the non-communicated or cognitive level. Since the communicated content was a second-order distortion of cognitive content, we expected to find more distortion of content, to support the group norm, in the Public conditions than in the Private conditions. (Hypotheses 2, 2.1, 2.2, 2.3, p. 17).

With greater group-imposed pressure toward uniformity, there should be greater distortion of content toward the norm. Thus, there should be more distortion of content in the Rejection conditions than in the Non-Rejection conditions. (Hypothesis 3, p. 17). It would follow that the greatest amount of norm-directed distortion of content should occur in the Public Rejection condition and the least in the Private Non-Rejection condition.

The hypotheses with respect to content were not supported

among those deviates who did not change their opinion. By way of explanation, it was suggested that non-changers, as compared to changers, were more involved in their own opinion, held their opinion more intensely, and were therefore more likely to support their initial opinion rather than change it. Pressure toward uniformity would in their case manifest itself as pressure to influence others and would therefore contain less norm-supporting content.

Support for this explanation came from a consideration of successive breakdowns which left us with individuals who were less involved in their own opinion. The differences were now in the predicted direction and with each breakdown the differences in means were greater. However, the smaller Ns usually reduced the significance of the difference. The difference between Public Rejection and Private Non-Rejection groups was most significant ($p = .025$ point).

A significant relationship was also obtained between (1) susceptibility to pressure to change and (2) opinion position. The less extreme deviates were more likely to change toward the group norm than were extreme deviates ($p < .01$ level). It was also found that individuals who, during the process of writing their individual descriptions, changed toward the norm, changed their opinion so as to decrease the discrepancy between their initial opinion and an opinion which would be supported by the content in their description ($p < .01$ level).

DISCUSSION

One of our original purposes was to distinguish between opinion and content bearing on an object of opinion. Techniques were developed for distinguishing between these two by experimental manipulation and content analysis. It was demonstrated that pressures toward uniformity actually operate on both opinion and content.

The hypotheses formulated were essentially of two sorts--hypotheses about effects of group pressures on change of opinion and hypotheses about effects of these pressures upon communicated and cognitive content bearing on that opinion. The data on the former hypotheses were especially clear. We have demonstrated that there will be pressure on a deviate to change his opinion toward a group norm even when the group has made no attempt to influence his opinion. In fact, we have found that pressure to change will operate even when he need not state his opinion to the group at any time. The change in opinion which we found then was a private change of opinion.[1] Prior studies have shown that there is a greater tendency to adhere to a group norm in public than in private--there may be and often is a discrepancy between the opinion which the individual expresses to others in his

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[1] However, in all cases, subjects knew that they would eventually discuss the object of opinion openly. They may have assumed that others would be able to deduce their opinion from the discussion.

group and the deviant opinion which he may privately hold (1, 21, 34). We have demonstrated that the private opinion will change more when the individual must communicate openly about the object of opinion, even if he need not mention the opinion itself to others in the group.

The hypotheses about content were less unequivocally supported than those about change of opinion. This is, of course, to be expected. The measurement of opinion change is much more direct than the measurement of distortion of content. Whereas the former involved merely a comparison of a written opinion statement from one time to the next, the latter required a number of judgments and assumptions about what each item of content meant to the individual. Even reliability between coders does not necessarily mean that these coders have succeeded in estimating what each content item meant to the writer. The validity check, though respectable, was not as high as it might be. The forces operating to distort content are also much less direct than those which make for change of opinion. It would, therefore, follow that difference in conditions which was strong enough to produce significant differences in change of opinion would not necessarily be impelling enough to result in similar statistically significant differences in distortion of content.

Perhaps the major explanation of our failure to get more clear-cut results with regard to content would center on our failure to recognize the strength of pressure to influence,

or support own opinion, among those deviates who did not change their opinion. We were not entirely successful in creating a situation wherein pressure toward uniformity manifests itself in pressures to change rather than in pressures to influence. Our evidence suggests that one reason for this is that these deviate non-changers held their own opinion with considerable intensity. There is a clear need for further studies which delineate the conditions which make for one manifestation of pressure toward uniformity rather than another. The finding that deviates with less extreme opinions are both more likely to change their opinions and to conform to the hypotheses about distortion of content is particularly suggestive.

The data on content becomes convincing far and above the individual significance points obtained when viewed as one overall pattern. With each successive breakdown which gave us subjects with less intense involvement in initial opinion, the differences in means became more sharp in their support of our initial hypotheses: deviates distorted content to support the norm more when their descriptions were to be made public than when they were to remain private; similarly, there was more norm-directed distortion when there was greater possibility of rejection. The findings would undoubtedly have been even more clear had we been more successful in inducing high attraction to the group or if we had had more reliable measures of distortion of content. Further investigation is particularly in order, to test these

hypotheses more specifically.

The finding that group pressure toward uniformity may operate first on the content bearing on the opinion before it operates on the opinion itself is especially intriguing. We found that subjects who had a deviant opinion would tend to change their opinion toward the norm even while writing an individual description, when the pressures toward uniformity operated first to distort the description so that it supported the group norm. This finding, in conjunction with other data, is suggestive of a theory of attitude change which might make more clear the process by which non-conformists may become conformists or overconformists. How would one explain such things as the staunch anti-Nazi who finding himself in a predominantly Nazi country eventually succumbs and accepts the total norms of the majority? Or the liberal northern student who adopts racist opinions from his Southern university classmates? We expect that one path by which attitudes might change would be as follows: (1) the individual finds that he is a deviate from a group norm; (2) he experiences pressures to conform which represent themselves as restraints against communicating content supporting his own opinion and pressures to distort and select content to support the group opinion; (3) he tends to selectively perceive content, looking for content which he can communicate and overlooking content which supports his own original opinion position; (4) he now sees a greater amount of evidence supporting the group norm, sees less

evidence supporting his own opinion. The result is that he changes his opinion to correspond to the weight of the phenomenological evidence--he conforms to the group norm. Though we cannot as yet claim unqualified support of such a theory, our data is certainly indicative enough to suggest further research to test it.

APPENDIXES

APPENDIX A.

THE CASE OF JOHNNY SANDRON [1]

Johnny was arrested for the robbery murder of an aged eccentric spinster, Miss Luella Barlow. A coroner's report revealed that Miss Barlow had been stabbed from behind, receiving deep gashes about the head, neck, and back. A bloody eight-inch bowie knife, carefully wiped to remove fingerprints, was found nearby. Also found was Miss Barlow's purse with the change purse removed. Evidence indicated that the victim had died after one of the very first wounds but had been stabbed a number of times afterwards.

Johnny was immediately suspected and was picked up by a police squad car about three hours later as he was walking out of a neighborhood theater. He had just seen an Abbott and Costello comedy. Johnny still had some money in his pocket. He had carefully washed blood stains from his clothing but there was still enough evidence of blood to make his guilt quite evident. He confessed readily. Then wept freely, saying that he hadn't meant to hurt her.

JOHNNY AND HIS ENVIRONMENT

At the age of 15, Johnny was two years older than the average child in his seventh grade class, and had a record of truancy and disinterest. He left school several months before the crime.

Johnny, his mother, and a younger brother, David, lived in a one-room flat in one of the worst slum areas in town. Six years ago his father had taken to drink and had died a year ago in a drunken brawl. During the past few years, Mrs. Sandron has attempted to supplement the scanty Welfare Department funds with what she could earn by taking in washing. Johnny has contributed some by selling magazines.

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[1] Adapted from Evans, J., "Johnny Rocco" (10).

Johnny's brother, David, aged 13, is anemic, a victim of congenital syphilis. David has a very high IQ and has shown considerable promise in school. An elder brother, "Lippy", has been in prison for some time now for a second sentence of armed robbery--the victim of the armed robbery was stabbed but managed to recover.

INTERVIEW MATERIAL

NOTE: The following are summary interviews made up by an investigating social case worker. In composing them, several concessions have been made to clarity and the time element in this study. The questions asked by the social worker have been omitted and the interview material put together so that it reads more smoothly. Less relevant parts of the interviews have been omitted. However, we have attempted to preserve the essential flavor and the pertinent facts from each interview.

INTERVIEW WITH MRS. SANDRON:

At heart, Johnny was a good boy but always felt that he wasn't wanted and was doing things all the time to make us think he was important. Thomas (Mr. Sandron) didn't care what happened to the kids. He never spent any time with the kids like other fathers do--except when he hit them, like when he was drunk. Johnny used to imitate his father when he would beat up small kids in the neighborhood. Johnny never liked Lippy and he was ashamed of him--said that Lippy was just a cheap crook. When the cops came for Lippy, Johnny said to me, "Good for Lippy. That's what he should get. He deserves it."

...Johnny used to get mad at David. He was jealous of David on account of David always got better clothes and food. I used to buy candy for David because the doctor said he needed sugar, but I couldn't afford to give any to Johnny. Johnny knew David was sick and needed these things, yet sometimes when my back was turned, he would beat up David and take candy and things away from him.

...He wanted to look dirty and tough. I tried to do better for the boys but I didn't get much money and lots of times I would look in the sugar bowl where I kept it and it would be gone--stolen.

...Johnny didn't have a bad nature. He never did anything wrong before this. He used to work hard selling magazines and he would give me the money he got. He liked birds and

animals and he used to get mad when kids would tie tin cans to cats. Other kids in the neighborhood couldn't understand this. They laughed at him because he liked birds and called him "Sparrow". They called him "yellow" because he wouldn't steal. He had to learn to steal because it was what he had to do to get along with his friends. Once he organized a bunch of smaller kids to play baseball and play games. He said he wanted to help them. Some of the boys stole but Johnny used to hit them if he caught them and make them give the things back.

...In school, Johnny was a terror. He always picked on the other smaller kids--trip them, put gum in their hair. They all said that he was a big bully. The kids' mothers used to come to me crying, ask me to do something about "Sparrow". The people at school tried to understand him. They used to come out and talk to me about him and ask me what they could do. Whatever they did, it didn't seem to make Johnny any better. Even the school psychologist gave Johnny up and said that he didn't know what you could do with him--seems like he was just bad. Johnny didn't try--he was too busy trying to be tough. We tried for a while to put him in a trade school to learn metal and woodwork--maybe he just didn't go good in booklearning. No use. He gave everybody there so much trouble that he was expelled. Johnny never did anything right and everytime he failed he got worse--he tried to make up for his failures by acting tough.

...The night she (Luella) was killed, Johnny came home early and asked me where was his bowie knife. He said he was going somewhere to get some money. Luella was a kind old lady, but people didn't understand her. She always used to do things for people--used to give kids candy and she never bothered anyone.

...Johnny heard me say that day that I just had to have some money to get David his medicine and didn't know how I could get it. He said I would get it somehow...

INTERVIEW WITH JOHNNY'S TEACHER--MISS SMITH

Johnny was always a trial to his teachers. He was nervous, fidgety, sullen, obstinate, cruel, disobedient, and disruptive. Teachers could only stand him for one day at a time. He is the most difficult boy I have ever had. I don't believe he belongs in a classroom. There is nothing in which he is interested enough to apply himself. From his very first day, he would enter the room sneering and disrupt the classroom. He would smoke, swagger, and use foul language continually. His attitude was reflected by his slovenly dress and appearance. Johnny had no regard for what belonged to anybody else. He

would always rip everything out of the hands of others, continually bullying the children who were younger and smaller than he. He would pick fights and take sadistic pleasure in torturing the children and hurting them. The other children could not help hating him. He had no friends.

...We have generally tried to understand Johnny. Mr. Jones, the principal, has had any number of conferences with me, with other teachers, and with the school psychologist. We have tried to do everything to help Johnny to adjust to school better but his obstinacy has always gotten the better of us. Even the police came and consulted with us. They had tried being nice to him, letting him go with a warning when he was caught stealing. It had not done any good. Whenever there has been anything wrong--a child hurt, something stolen from the cloakroom--we have always known where to look for the culprit--Johnny was always found to be responsible.

...Johnny's behavior carried beyond school. He often stole money and goods from neighborhood stores, newstands, as well as from neighbors. In his neighborhood he had organized a number of smaller boys who were a terror in the neighborhood. The gang was broken up when Johnny led them in a stoning attack on a settlement house.

...Johnny was friendless in school and at home. Often he would attempt to use his stolen articles to attempt to buy friendship.

...He became more and more violent. This culminated in an attack on a smaller boy which was so vicious that the child had to be hospitalized. To protect the children and for the good of all concerned, Johnny was asked to leave school.

In his home relations, Johnny showed considerable hatred for his mother. Mrs. Sandron worked hard to support the two boys, particularly David--a charming and brilliant boy--who was ill. She showed considerable love and affection for Johnny, too, always tried to do what she could for him. In return, Johnny often struck her and would often stay away from home for extended periods without letting her know where he was. Johnny also despised his brother David, considered him a "pantywaist" and a bookworm. He was once heard remarking to one of his friends that he would be happy if David "kicked off already". Johnny's ideal was his older brother, a habitual criminal. When his brother was convicted of "armed robbery" and "assault with intent to kill", Johnny cursed the "cops". He seemed to want to be like his older brother more than anything else.

Some of the people in the neighborhood felt that Luella Barlow "had it coming to her". She had been mean to Johnny.

She used to hire Johnny to do odd jobs for her and then not pay him, strike him when he objected...The murder would seem to be deliberate: Johnny had often told younger children that he was going to kill her some day, but that he felt he would want her to die slowly so that "she would feel it". The very day of the crime, I heard him tell a little girl that he would take her to the movies that night and that he knew where he would get the money for it.

INTERVIEW WITH JOHNNY

Sure I'm glad I did it. And I would do it again, too. I enjoyed seeing her getting it after all the things she did to me and the other kids. She was always mean to me and to the other kids. I guess she was nice to me once in a while. She gave me dinner lot of times when I didn't have anything to eat at home. And she gave me money more than once just when I told her I needed it. She even stopped some of the big guys from down the street from beating me up once. Then she sticks her nose where it wasn't wanted--like the time she hit me for feeding poisoned birdseeds to the pigeons. She used to buy things we stole...said that was just to help us out...but she never paid us much...still owed me for that watch I stole from that drunk and lots of other things too. When I was walking home that night, she called me...Why don't I come up and see her anymore, she asks. I said cause she still owed me for things and besides I was going straight. She looks at me and smiles.

...She was against me just like everybody else. My teachers, the other kids, the cops, even my mother and brothers. All of them were against me--nobody liked me. Okay for them. If they want war, they'll get it... The cops always used to pull me in when they didn't have a thing on me because I didn't do nothing...they always say, "We know you. You are no good like your old man and your brother Lippy. You might as well confess cause we'll have you in the pen in no time." They never give me a chance. Sure I used to steal...peaches from the orchard, cakes from the bakery, money from drunks, then stuff from stores. I had a gang that had them going for a while. Most of the kids were younger but they could steal like nobody's business--I taught them. They did everything they shouldn't do in school and we practically burned down the school once. I really got a charge out of that--it makes you feel like you really got something when you got a gang behind you that does what you say.

In school I used to see the teacher and the principal

talking about me...say how they could make me less trouble for them, or should they kick me out of school altogether ...never how they could help me with anything...Anything wrong, it was always my fault. First thing I go into the room, teacher says in front of the kids, "You're Johnny Sandron. I know all about you. But don't think you're not going to be good in here!" ...Most of the kids in the room were little and weak. I used to enjoy seeing them wince when I hit them. Luella was weak too. Some of them used to pay me once a month I shouldn't hit them...I would have stuck at school, 'cept that David was sick and Mom needs money...Hadda quit to find a job. Had to help out David. He needed medicine right away bad. Wanted to do what I could to help him get well. He was a right kid--always did the right thing.

...You think my family sticks up for me? Not on your life. My old lady never did like me--always used to slap me...said she never wanted me in the first place. I would do anything for her. The money I got from stealing I would never give her--only the money I got right. She didn't get much money from me--I lost what I made in magazines at Joe's Pool Room--Lippy had the right idea. He sure knew how to put one over on the cops. I could get along OK if I had Lippy's guts.

APPENDIX B.

CONTENT ANALYSIS

Since the coded content was to play such an important part in the testing of the hypotheses in this study, the planning of the content analysis started with the actual construction of the case study about which the individual descriptions were to be written.[1] Once it was decided to use a juvenile delinquency case as the object of description, a continuum of opinion had to be selected. The continuum of opinion had to be one about which a difference of opinion would seem plausible, but one in which many of the subjects would actually tend to select an opinion toward one end of the scale. The continuum selected, as noted in the section on methods, concerned the extent to which Johnny the delinquent, was responsible for his crimes, as compared to the extent to which his behavior was environmentally determined. As we can see from the continuum (Figure 1 in the text), positions 1, 2, and 3 ascribed the responsibility for the crimes to Johnny personally; this series of opinions was coupled with a general negative attitude toward Johnny. The other end of the scale (positions 5, 6, and 7) was more favorable to Johnny, and included a greater allowance for Johnny's behavior as being the result of a malevolent environment.

Directional Categories

The case study was constructed so as to contain a large number of items supporting both ends of the opinion scale. The criteria used in the construction of the case study were now made more explicit and used in the setting up of a coding system. Three directional categories of coding were defined: (1) Positive -- items supporting the environmental responsibility end of the scale (5, 6, 7), "positive" to Johnny, supporting the position usually taken by the subjects; (2) Negative -- items supporting the negative-to-Johnny, personal responsibility, end of the scale, supposedly the position held by the group mode; (3) Neutral or Ambiguous --

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[1] This section is an elaboration of discussion of data collection in Chapter 2.

items which could not be clearly coded in either of the other two categories.

Frame of Reference and Criteria for Coding

In setting up the criteria for coding, it was decided to adopt a respondent's frame of reference. The attempt was to decide which sorts of items would more likely be found in a description of the case written by a subject (University of Michigan undergraduate) who occupied a position at the positive end of the scale, then to decide which items would be more expected in a predominantly negative description. This is quite distinct from asking ourselves which items would the subject consider positive and which negative. The frame of reference adopted was more psychological than phenomenological. For example, in the "Criteria for Coding", it was decided that in the description of the crime, all detail in description would be presumed to be "negative". The subject would merely regard this as part of an objective description. The actual criteria used were intuitively created by the experimenter and coder,[1] with some help from informal interviews with undergraduates. In the "Criteria for Coding", the attempt was to include as many different types of items as possible and decide as to bases for directional coding of these items.

Recording Unit

The size of the recording unit had next to be determined. The decision was to record as a unit the smallest segment of content which makes an assertion and can be placed in one of the three directional categories--a "meaning unit". Thus the first sentence of the original case study was coded as five items: "Johnny was arrested for the robbery/murder/ of an aged/ eccentric/ spinster/." By this definition, reliability in unitizing could not be as great as it would be for some other unit--such as words or sentences, for example. However, there seemed no reason to believe that the resulting error would be systematically related to the independent variables. Furthermore, it was felt that the reliability of the directional codings would be greater

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[1] The writer is deeply indebted to Mr. Irwin Goffman for his part in the development of the "Criteria for Coding", the setting up of the selections code, and for coding the descriptions.

with such a recording unit and the directional codings were crucial to the theoretical hypotheses.

Context Unit

The context unit for coding, the unit which was to serve as context in determining the meaning of the recording unit, was primarily the sentence and secondarily the paragraph. The coder was to read through the entire paragraph first to get the general meaning. The judgment as to the directional coding of the recording unit was based primarily on its meaning in the specific sentence. When the directional coding was still difficult, the entire paragraph was to be used as context.

Coding the Original Case Study

Before coding any of the data, the coder and experimenter went through the entire Case of Johnny Sandron, breaking it down into items, and coding these items according to the criteria already described. Besides improving reliability through this experience, this coding of the case study offered an opportunity to refine the criteria further. Then the coded items were so arranged and indexed as to allow for easy reference. In addition to the specific item, the directional code for that item was included in the "selections code". When it seemed relevant, the context in which this item might be given one directional coding rather than another was also included. The coded story could now be used in conjunction with the criteria to aid in making judgments in the coding which followed.

Selection and Inference

In addition to the directional coding, it was decided to include a coding for selection and inference. An item was coded as "selected" if it could be clearly related to an item in the original case study, that is, if it could be related to one of the items in the "selections code". An item was coded as "inferred" if (1) it was contrary to "facts" in the original case study, or (2) it was impossible to find a ready referrent for that item in the original case study. No clear hypotheses were formulated as to the relationship between experimental conditions and number of coded inference and selection items. It was thought that a difference might appear if the effects of the experimental variations were strong enough. No difference did appear

and this distinction was not considered further in the analysis. However, a reliability check of the 33 subjects with 778 coded items showed 81.4% agreement between coders in classifying the items as "selected" or "inferred".

Coding of Exploratory Subjects' Data

Before coding any of the data from experimental groups the descriptions written by a number of individuals in exploratory groups were coded. The codings were discussed and further refinements made in criteria until coder reliability seemed satisfactory.

The Coefficient of Imbalance

With the individual descriptions of the case coded, we now had for each subject the number of items in his description which supported the positive end of the scale, the number which supported the negative end of the scale, and the number which could not be coded as either positive or negative. We now needed a score for each subject which would indicate the extent to which his description tended to support the positive or negative end of the scale. The criteria for this score were very much the same as those chosen by Janis and Fadner for a "Coefficient of Imbalance" (19, p. 157):

1. "The Coefficient should always increase in the positive direction when the frequency of units of favorable content increases.

2. "The Coefficient should always increase in the negative direction when the frequency of units of unfavorable content increases.

3. "The Coefficient should always decrease in absolute value when the frequency of units of neutral content increases.

4. "The Coefficient should always decrease in absolute value when the number of units of total content increases. (Provided the difference between frequency of favorable and unfavorable content remains constant).

5. "If there is no relevant content, the Coefficient must be zero.

6. "If all units of relevant content are neutral, the coefficient must be zero.

7. "If the number of units of favorable content is equal to the number of units of unfavorable content, the Coefficient must be zero.

8. "If the number of units of favorable and unfavorable content are not equal, the Coefficient must not be zero.

9. "If all the relevant content is favorable (or unfavorable), any variation in the frequency of units of favorable (or unfavorable) content should provide a directly proportionate variation in the Coefficient.

10. "If there is no neutral content, the Coefficient must vary directly as the ratio of the favorable to the unfavorable (whenever the difference between favorable and unfavorable content remains constant)."

These criteria were generally accepted as applying here, with the exception that all content in the present study was considered as relevant, hence the fifth criterion was not considered applicable. In order to use standard statistical tests of significance, however, it was considered advantageous to add another criterion:

11. The distribution of Coefficients should approximate normality, and the variance of the distribution should be independent of its mean.

Considering the data available in this study, the following formula seemed to fulfill the criteria suggested by Janis and Fadner:

$$C = \frac{f - u}{f + u + n}, \quad \text{or} \quad C = \frac{f}{N} - \frac{u}{N},$$

where f is the number of favorable items coded, u is the number of unfavorable items coded, and n is the number of neutral or ambiguous coded, and N is the total number of coded items.

The formula above would satisfy the relevant requirements suggested by Janis and Fadner. It would vary from +1.00, when all items were positive, to -1.00, when all items were negative. When the number of positive items was equal to the number of negative items, or when all items were neutral, the Coefficient would be equal to zero.

The additional criterion would not be met by this formula since the variance of distributions of proportions is correlated with the mean of that distribution. Following the method, and using the tables, provided by Snedecor (38 p.

447), an arc sine transformation was utilized to make this distribution satisfy this criterion. The actual formula used to calculate the Coefficient of Imbalance used in this study was:

$$CI = \text{arc sine} \sqrt{\frac{f}{f+u+n}} - \text{arc sine} \sqrt{\frac{u}{f+u+n}}$$

The result was that for each person we had a score which gave a clear index of the extent to which he tended to select content which supported one end of the opinion as compared to the other. The possible range of scores was from +90.00 to -90.00, with neither extreme actually being reached. For the 399 subjects in the experimental and control conditions, the mean Coefficient of Imbalance was + 1.03. The standard deviation was 19.3.

Reliability and Validity

The reliability and validity of the Coefficient of Imbalance were discussed in the section on methods. In testing for reliability, thirty-three cases, totaling 777 items, were selected for reliability coding by the experimenter. Since the experimenter and the coder had developed the categories together, not much additional training was necessary. The cases were selected as follows: First, all subjects were ordered according to their CI, then approximately every twelfth subject was withdrawn for reliability check. The reason for this was to insure a broad range of scores for a better test of reliability. The descriptions were, of course, coded without any knowledge of the score obtained previously or of the experimental condition. In coding, the units of the first coder were accepted and only the directional coding checked for reliability. As noted in the text, there was 79.8% agreement as to the directional coding. Of those items in disagreement, only 2.9% indicated a discrepancy in which one coder coded the item as positive and the other as negative. A product-moment correlation of .84 was obtained in comparing the CIs obtained by the two coders.

The validity check was obtained by examining the relationship between the individual CIs and the corresponding opinion as checked by the subject. This is reported on page 55.

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