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Some Factors Affecting The Change of Attitude of College Freshmen

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SOME FACTORS AFFECTING THE CHANGE OF ATTITUDE OF COLLEGE FRESHMEN

being

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by

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date

ACKNOWLEDGEMENT

The writer wishes to acknowledge gratefully the guidance and helpfulness of Dr. George A. Kelly, under whose direction this thesis was written, and to thank Miss Maude I. Gorham for permission to use her classes in Elementary Psychology as part of the experimental group in this study.

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STATEMENT OF PROBLEM

The purpose of this study was to investigate some of the factors which influence the change of attitude toward a proposition, using 314 college students enrolled in elementary and educational psychology courses at the Fort Hays Kansas State College during the winter 1938-39.

PROCEDURE

The method used in this investigation followed that of Remmers[1] rather than the one formulated by Thurstone,[2] since the object of the study was to discover various factors which would influence shifts in attitude rather than to obtain a definite point measure of any one individual's attitude toward a given proposition.

In all cases the proposition was presented orally to the group and after hearing it, the students were asked to record their attitudes toward various aspects of it by selecting statements on various scales such as the following:

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1. Remmers, H. H., Studies in attitudes - a contribution to social psychological research, Studies in Higher Education XXVI, Bulletin of Purdue University, XXXV, 7-17.
2. Thurstone, L.L., Attitudes can be measured, Am. J. Sociol., 33, 529-554.

A. General Attitude
   1. I am strongly opposed.
   2. I am opposed.
   3. I am slightly opposed.
   4. I am neutral. It makes no difference at all.
   5. I am slightly favorable.
   6. I am favorable.
   7. I am highly favorable.

B. Familiarity
   1. I had not heard of anything like it before.
   2. It seems to me that I have heard of something like that before.
   3. I know that something like that has been suggested before.
   4. I had heard that there was such a plan.
   5. I saw or heard it explained once but I do not know much about it.
   6. I know quite a bit about the plan.
   7. I am thoroughly familiar with the plan.

C. Appraisal
   1. I think it's the limit in crazy ideas. I am not supposed to take it seriously, am I?
   2. It just doesn't make sense to me.
   3. It sounds a little dumb.
   4. It is just another idea as far as I can see.
   5. It isn't such a bad idea, I suppose.
   6. It is really a clever suggestion.
   7. That is the most intelligent thing that I have heard yet.

D. Participation
   1. I just hate to have to fool around with such ideas.
   2. I would rather not have anything to do with it.
   3. I am slightly bored with the suggestion.
   4. I have no feelings one way or the other.
   5. I am somewhat interested - what about it?
   6. Let's look this up and see what is in it.
   7. Let's all get together and work out such a plan in detail.

E. Timeliness - Expediency
   1. It's the last thing that anyone ought to try.
   2. Why can't we avoid that sort of thing for the present at least!
   3. There are better suggestions that we should try first.
   4. I suppose we could try that.
   5. I wouldn't mind seeing somebody try it soon.
   6. Well, why don't we try it now!
   7. Let's get it started right away.

F. Feeling
   1. As far as I am concerned I don't think I could bear it.
   2. I hope I don't ever have to go through with it.
   3. Such a program would annoy me.
   4. I don't care what they try.
   5. I guess I would be well enough satisfied with such a plan.
   6. I would like to be "in on it" when they get it started.
   7. It would be the finest thing that ever happened as far as I personally am concerned.

G. Consideration
   1. Such suggestions are definitely dangerous and ought not to be permitted.
   2. Making such a suggestion will do more harm than good.
   3. That sort of suggestion gets us nowhere.
   4. I suppose it is all right for people to make such suggestions.
   5. It probably is a good thing for people to think about such plans.
   6. Constructive suggestions such as this one should definitely be encouraged.
   7. This is a suggestion which ought to be investigated seriously and thoroughly by every citizen.

H. Prospect
   1. Such a program would destroy whatever hope we now have for a sound society.
   2. The program would seriously handicap our social progress.
   3. The program would do slightly more harm than good.
   4. In general the plan would neither make things better nor worse.
   5. The plan would possibly do more good than harm.
   6. The plan would be a definite and constructive step toward improving the world.
   7. This is the one plan that will save the world and meet the needs of the new society.

I. Reconsidered General Attitude
   1. I am strongly opposed.
   2. I am opposed.
   3. I am slightly opposed.
   4. I am neutral. It makes no difference at all.
   5. I am slightly favorable.
   6. I am favorable.
   7. I am highly favorable.

The above scale was used for one series of investigation and similar scales were prepared for use in further studies. For this purpose from seven to eighteen statements were selected for each of the seven points on the scale. The sheets containing these statements were then handed to ten advanced students majoring in psychology and they were asked to assign to each statement a place on a calibrated scale ranging from +5 to -5. For the master scale the mean scalar value of each statement was determined and those statements selected which represented points approximately equally spaced on the scale.

A. General Attitude

1.

I am strongly opposed. (Mean scalar value 1.3)

2.

I am opposed. (Mean scalar value 2.4)

3.

I am slightly opposed. (Mean scalar value 3.2)

4. I am neutral. It makes no difference at all. (Mean scalar value 4.0)

I am slightly favorable. (Mean scalar value 4.5)

5.

I am favorable. (Mean scalar value 5.5)

6.

I am highly favorable. (Mean scalar value 6.7)

7.

B. Familiarity

1.

I had not heard of anything like it before. (Mean scalar value 1.5)

2.

3. I saw or heard it explained once but I do not know much about it. (Mean scalar value 3.3)
It seems to me that I have heard of something like that, before. (Mean scalar value 3.5)

4. I had heard that there was such a plan. (Mean scalar value 4.0)

I know that something like that has been suggested before. (Mean scalar value 4.5)

5. I know quite a bit about the plan. (Mean scalar value 5.5)

6. I am thoroughly familiar with the plan. (Mean scalar value 6.9)
7.

C. Appraisal

1. I think it's the limit in crazy ideas. I'm not supposed to take it seriously, am I? (Mean scalar value 1.0)

2. The plan appears mainly unsound. (Mean scalar value 2.1)

3. It sounds a little impractical. (Mean scalar value 3.4)

4. It is just another idea as far as I can see. (Mean scalar value 4.0)

The idea is passable. (Mean scalar value 4.6)

5.

6. It is really a clever idea. (Mean scalar value 6.0)

7. That is the most brilliant suggestion that I have ever heard. (Mean scalar value 7.0)

D. Participation

1. I definitely would refuse to participate in such a plan. (Mean scalar value 1.0)

2. I just hate to have to fool around with such ideas. (Mean scalar value 2.2)

3. I am slightly bored with the suggestion. (Mean scalar value 3.2)

4. I have no feelings one way or the other. (Mean scalar value 4.0)

5. I am interested - what about it? (Mean scalar value 5.0)

Let's look this thing up and see what there is to it. (Mean scalar value 5.6)

6.

Let's all get together and work out such a plan in detail. (Mean scalar value 6.6)

7.

E. Timeliness - Expediency

1.

It's the last thing that anyone ought to try. (Mean scalar value 1.1)

2.

This plan should not be tried now. (Mean scalar value 2.1)

3.

There are cleverer suggestions that we should try first. (Mean scalar value 3.0)

4.

I suppose we could try that. (Mean scalar value 4.0)

I wouldn't mind seeing somebody try it soon. (Mean scalar value 4.7)

5.

We should try the plan out now. (Mean scalar value 5.9)

6.

The plan should be started immediately. (Mean scalar value 6.5)

7.

F. Feeling

1.

As far as I am concerned I don't think I could bear it. (Mean scalar value 1.1)

2.

I should definitely dislike such a plan. (Mean scalar value 2.2)

3.

I don't particularly care for the idea. (Mean scalar value 3.2)

4. I don't care what they try. (Mean scalar value 4.0)

I am somewhat pleased with the idea. (Mean scalar value 4.5)

5.

6. As far as I am concerned it is a definite step forward. (Mean scalar value 6.0)

7. It would be the finest thing that ever happened as far as I personally am concerned. (Mean scalar value 7.0)

G. Consideration

1.

Such suggestions are definitely dangerous and ought not to be permitted. (Mean scalar value 1.3)

2. Making such a suggestion will do considerably more harm than good. (Mean scalar value 2.2)

3. That sort of suggestion gets us exactly nowhere. (Mean scalar value 3.1)

4. I suppose it is all right for people to make such suggestions. (Mean scalar value 4.0)

5. It probably is a good thing for people to think about such plans. (Mean scalar value 5.1)

Suggestions such as this should be encouraged. (Mean scalar value 5.5)

6. This is a suggestion which should be investigated seriously and thoroughly by every citizen. (Mean scalar value 6.9)

H. Prospect for Success

1. Such a program would destroy whatever hope we now have for a sound society. (Mean scalar value 1.2)

2. Such a program would make very difficult the building of a new society. (Mean scalar value 2.1)

3. The program would do slightly more harm than good. (Mean scalar value 3.1)

4. In general the plan would neither make things better nor worse. (Mean scalar value 4.0)

The plan would probably be better than nothing. (Mean scalar value 4.5)

5.

6.

The plan would be a definite and constructive step toward improving society. (Mean scalar value 6.2)

This is the one plan that will save the world and meet the needs of the new society. (Mean scalar value 6.5)

7.

I. Reconsidered General Attitude

1.

I am strongly opposed. (Mean scalar value 1.3)

2.

I am opposed. (Mean scalar value 2.5)

3.

I am slightly opposed. (Mean scalar value 3.2)

4. I am neutral. It makes no difference at all. (Mean scalar value 4.0)

I am slightly favorable. (Mean scalar value 4.6)

5.

I am favorable. (Mean scalar value 5.5)

6.

I am highly favorable. (Mean scalar value 6.6)

7.

Since the radical characteristics of some of the statements were suspected of having some influence upon changes of attitude, a milder scale was constructed which consisted of the seven-point extreme scale with the extreme statements omitted, such as the following:

A. General Attitude

1.

I am opposed. (Scalar value 1.5)

2.

I am slightly opposed. (Mean scalar value 2.2)

3. I am neutral. It makes no difference at all. (scalar value 3.0)

I am slightly favorable. (scalar value 3.5)

4.

I am favorable. (scalar value 4.5)

5.

B. Familiarity

1.

1

2.

I saw or heard it explained once but I do not know much about it. (scalar value 2.3)

It seems to me that I have heard of something like that before. (scalar value 2.7)

3. I had heard that there was such a plan. (scalar value 3.0)

I know that something like that has been suggested before. (scalar value 3.5)

4. I know quite a bit about the plan. (scalar value 4.6)

5.

C. Appraisal

1. The plan appears mainly unsound. (scalar value 1.2)

2. It sounds a little impractical. (scalar value 2.4)

3. It is just another idea as far as I can see. (scalar value 3.0)

The idea is passable. (scalar value 3.7)

4.

5. It is really a clever idea. (scalar value 5.0)

D. Participation

1. I just hate to have to fool around with such ideas. (scalar value 1.2)

2. I am slightly bored with the suggestion. (scalar value 2.2)

3. I have no feelings one way or the other. (scalar value 3.0)

4. I am interested - what about it? (scalar value 4.0)

5. Let's look this thing up and see what there is to it. (scalar value 4.7)

E. Timeliness - Expediency

1. This plan should not be tried now. (scalar value 1.1)

2. There are cleverer suggestions that we should try first. (scalar value 2.0)

3. I suppose we could try that. (scalar value 3.0)

I wouldn't mind seeing somebody try it soon. (scalar value 3.8)

4.

We should try the plan out now. (scalar value 4.8)

5.

F. Feeling

1.

I should definitely dislike such a plan. (scalar value 1.2)

2.

I don't particularly care for the idea. (scalar value 2.2)

3. I don't care what they try. (scalar value 3.0)

I am somewhat pleased with the idea. (scalar value 3.6)

4.

5. As far as I am concerned it is a definite step forward. (scalar value 5.0)

G. Consideration

1. Making such a suggestion will do considerably more harm than good. (scalar value 1.2)

2. That sort of suggestion gets us exactly nowhere. (scalar value 1.2)

3. I suppose it is all right for people to make such suggestions. (scalar value 3.0)

4.

It probably is a good thing for people to think about such plans. (scalar value 4.1)

Suggestions such as this should be encouraged. (scalar value 4.8)

5.

H. Prospect for Success

1.

1 Such a program would make very difficult the building of a new society. (scalar value 1.1)

2.

The program would do slightly more harm than good. (scalar value 2.1)

3. In general the plan would neither make things better nor worse. (scalar value 3.0)

The plan would probably be better than nothing. (scalar value 3.6)

4.

5. The plan would be a definite and constructive step toward improving society. (scalar value 5.0)

I. Reconsidered General Attitude

1.

I am opposed. (scalar value 1.5)

2.

I am slightly opposed. (scalar value 2.2)

3. I am neutral. It makes no difference at all. (scalar value 3.0)

4.

I am favorable. (scalar value 4.5)

5.

The fourth scale which was used was one which contained no statements whatever, merely ranging from +2.5 to -2.5 with 0 as the neutral point. If a subject favored the proposition, he indicated the degree of favorability by encircling a dot between 0 and +2.5. If he opposed the plan, he encircled a dot between 0 and -2.5. The following form was used:

A. General Attitude

-2.5.
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-2.0.
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-1.0.
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0.
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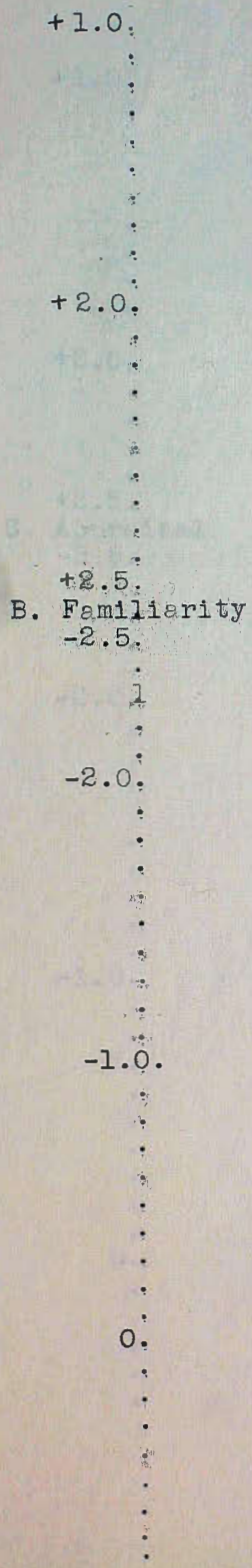
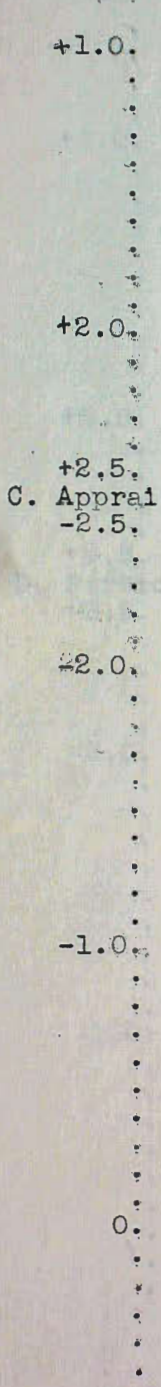
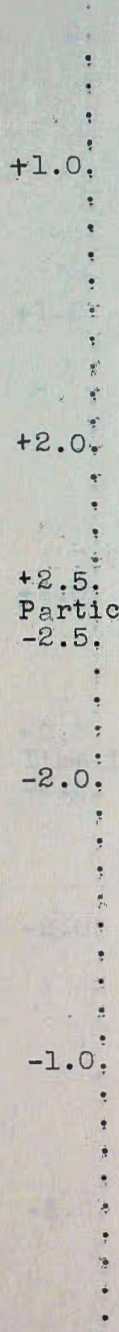
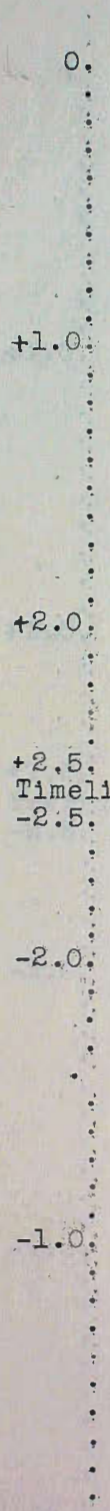
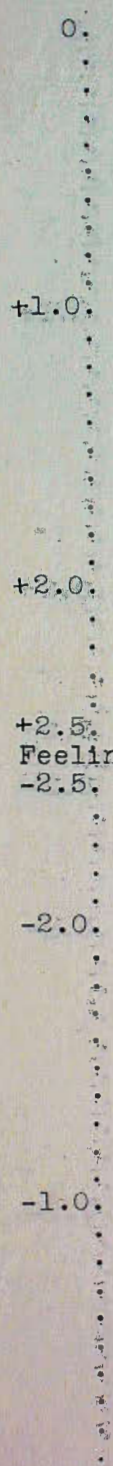
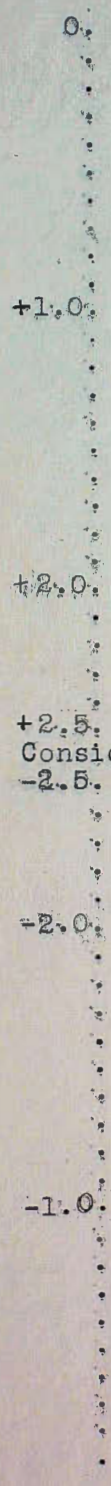

+1.0.
+2.0.
+2.5.
B. Familiarity
-2.5.
1
-2.0.
-1.0.
0.

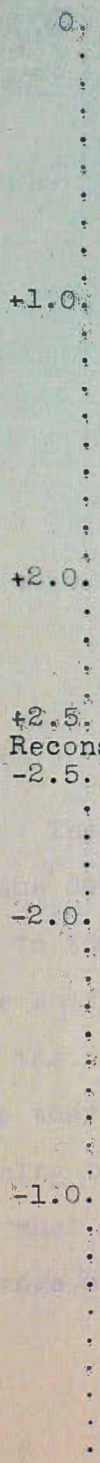

+1.0.
+2.0.
+2.5.
C. Appraisal
-2.5.
-2.0.
-1.0.
0.


+1.0
+2.0
+2.5
D. Participation
-2.5
-2.0
-1.0

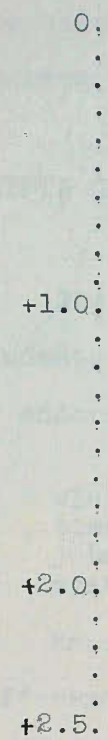

0.
+1.0.
+2.0.
+2.5.
E. Timeliness - Expediency
-2.5.
-2.0.
-1.0.


0.
+1.0.
+2.0.
+2.5.
F. Feeling
-2.5.
-2.0.
-1.0.


0.
+1.0.
+2.0.
+2.5.
G. Consideration
-2.5.
-2.0.
-1.0.



I. Reconsidered General Attitude



The knowledge that shifts in attitude toward propositions do occur from time to time raised several questions as to the conditions under which these shifts occur. Are the shifts in attitudes determined by the intrinsic nature of the proposition toward which the attitudes are directed? Are they influenced by the nature of the questions intervening between the original and the reconsidered attitude? In what way are propaganda, discussion, etc. related to the change of attitude? And do attitudes shift on a linear

scale; that is, are the various degrees of opposition in the same dimension line as the numerically corresponding degrees of approval and neutrality?

SHIFTS OF ATTITUDE OCCURRING WITHIN THE PERIOD OF ATTITUDE INVENTORY ADMINISTRATION

The following proposition* was read to a class of 87 students and then then recorded their attitudes toward it by endorsing statements on a seven-point scale**:

> "It has been suggested that a half-time schedule of high-school subjects, combined with a half-time schedule of opportunities to learn while on jobs in business, be substituted for the traditional system of high school administration."

Results of this study show that there was a reliable difference between markings on Scale A and on Scale I representing a shift toward favorability, as shown by a critical ration of 4.45. The correlation*** between A and I judgments was .80 ±.041 Evidently something occurring during the administration of the scale produced a reliable shift in attitude.

The same procedure was followed for four classes containing a total of 166 students, and to two of the classes the scale was administered the second time. Results as giv-

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*Mason, Harry, A Box Scale for Measuring Attitudes, Transactions of Indiana Academy of Science, 1938.

**See page 2.

***The following formula for correlated measures was used:

$$r = \sqrt{\frac{V_a + V_i - V_d}{2\sqrt{V_a V_i}}}$$

en in Table I show that there was a slight but statistically unreliable tendency for the groups to be more heterogeneous in marking I judgments, as evidenced by the fact that the I distributions have slightly higher standard deviations than do the A distributions.

TABLE I

MEANS AND STANDARD DEVIATIONS OF A AND I JUDGMENTS WITH USE OF SEVEN-POINT ATTITUDE SCALE

Class	N	Mean A	σ A	Mean I	σ I	I-A (Gain)
I	32	4.81	1.46	5.03	1.51	.22
*IA	27	4.74	1.51	4.70	2.13	-.04
II	39	4.57	1.85	4.74	1.68	.17
III	51	4.98	1.82	5.37	1.37	.39
*IIIA	45	5.33	1.61	5.38	1.65	.05
IV	44	4.93	1.44	5.27	1.47	.34
	166	(excluding IA and IIIA)				

SHIFTS OF ATTITUDE BETWEEN ATTITUDE INVENTORY ADMINISTRATIONS AS AFFECTED BY SOCIALIZED ORAL DISCUSSION, WRITTEN DISCUSSION, PROPAGANDA, AND PREPARED ANALYSIS

The findings as listed in the previous section of this thesis led to the question of the effect on shifts in attitude of outside influences such as socialized oral discussion, written discussion, propaganda, and prepared analysis.

Two methods of crystalizing attitudes were used with

*Second administration of the scale to the same group.

the half-time schedule proposition. The first class, after the first administration of the seven-point scale, participated in three periods of socialized oral discussion of the proposition varying from seven to fifteen minutes each on separate days, and then the scale was administered again and their attitudes checked. The second class, after the first administration of the same scale, were asked in three periods varying from seven to fifteen minutes each, to give a short written discussion of the plan. This was done in an effort to crystalize individual opinion while at the same time avoiding somewhat socialized influences. Members of the class were asked not to discuss the proposition with anyone during the experimental period. After the third period of written discussion the scale was administered a second time.

Results, shown in Table II, indicate that when there was general oral discussion of the proposed plan, there was no general statistically reliable shift between the first and second testing. The group appeared to be more scattered in their final judgments, as evidenced by an increase in the standard deviation for the I distribution of .67 points. A critical ratio of 2.13 shows this increase to be slightly below the limit for reliability.

When there was a written crystalization of individual

attitudes, no reliable shift in attitude was found. There was also no statistically reliable difference in standard deviations.

In order to determine the shift of attitude between administrations of an attitude scale as affected by slight propaganda, the following proposition was read to a class of 45:

> "It has been suggested that the city manager plan of government be adopted for use in the nation. The business manager would be empowered to run the government on an efficient and business-like basis, taking whatever means he deems necessary to eliminate waste, destructive influences, and partisan politics. He would be empowered to serve for a five-year term, at the end of which time his program could be approved or rejected by a general ballot. A body of 500 members elected by the people would serve as his advisory council. The business manager, however, would be held solely responsible for the efficiency of the government."

Data in Table II indicate that this proposition showed a slight unreliable shift toward opposition between the A and I scales represented by a critical ratio of 1.43 when Scale I was administered. The correlation, however, was high, being .97 ± .01. Students were then told that the proposition represented essentially a form of Fascism and that it was a rather sympathetic and objective statement of true Fascist ideals. A J scale was administered approximately two minutes after the I scale had been indicated. Statements of this scale were the same as for A and

I. There was an immediate and statistically reliable shift toward opposition between the I and J judgments, represented by a critical ratio of 5.47. However, not everyone shifted his judgment equally, since the correlation between I and J was only .78 ±.06. Apparently very simple propaganda will cause reliable shifts in judgment.

A different proposition was used in order to discover the effect of prepared analysis on attitudes. Two classes with a total of 85 students heard the following proposition read, after which one class marked their attitudes on a seven-point scale*, the other using a five-point scale** to indicate their attitudes toward various aspects of the plan:

> "It has been suggested that all teachers' certificates should expire after a period of five years but could be renewed if the applicant demonstrated his ability to pass a general examination and requalify for the teacher's certificate."

After the first administration of the scale the following statements of arguments for and against the plan were read to each class and at the following class session the scale was administered the second time to each class.

Arguments for the proposition:

1. Would make certain that those in the profession remained progressive.
2. It would tend to keep out of the teaching field those who under the present set-up look upon teaching as a temporary occupation only, since they would not enter the field knowing that they would be required to requalify periodically.

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*See page 4.
**See page 15.

3. This limiting of the field would reduce the over-crowded condition which is apparant at the present time.
4. Ths plan would raise teaching standards, since only those best fitted for this profession and who were professionally interested in the work would be willing to requalify every five years.
5. Limiting of the field would tend to increase wages as it would make for a scarcity of teachers. This would better enable teachers to progress in their field.

Arguments against the proposition:

1. Such a plan would have a tendency to lower the standards of the teaching profession. Knowing that they would be required to requalify at the end of five years, a number of individuals would regard it as a temporary occupation only, and would not be professionally interested in remaining progressive after the first year or two. It would be used merely as a stepping-stone to other vocations.
2. The fact that an examination would be given periodically would tend to emphasize the routine, mechanical features of the profession rather than furtherance of training.
3. Since the average length of time in the teaching profession is five years, such an action would be unnecessary.
4. Such a plan would require an organization to pass on examinations. With the present governmental set-up, this would probably be under political control.
5. A plan such as this one would be a step toward a more socialized and regulated society, which is against the principles on which our nation is founded.

A study of Table II will show that there was an unreliable shift of judgment from the initial A rating to the final I rating when the five-point scale was used. However intervening discussion seemed to improve the reliability of the second administration of the scale as judged by correlation between A and I judgments, for when the scale was first given the correlation between A and I judgments was .88 ±.02, whereas when the scale was administered the second time the correlation was .96 ±.01. This would indicate

that crystalizing argument tends both to shift judgments and to make the use of the scale more reliable in its second administration.

TABLE II

JUDGMENTS BEFORE AND AFTER SOCIALIZED ORAL DISCUSSION, WRITTEN DISCUSSION, PROPAGANDA, AND PREPARED ANALYSIS

Class	Initial Mean A	Initial σ A	Final Mean I	Final σ I	$\sigma r^{*}_{\bar{a}-\bar{i}}$
I - oral discussion	4.81	1.46	4.70	2.13	- .23**
II - written discussion	4.98	1.82	5.38	1.65	1.11
III - propaganda	3.34	1.80	2.47	1.60	-1.43**
IV - prepared analysis (7-point)	4.85	1.19	4.84	1.18	- .47**
V - prepared analysis (5-point)	3.37	1.20	3.67	1.02	.55

SHIFTS OF ATTITUDE BY PROPOSITIONS

The next question which arose was whether or not the nature of the proposition itself determined the degree to which the attitude shifted.

Results as given in Table III show that the use of the half-time schedule proposition brought about a reliable

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*The following formula was used in determining the reliability of the difference between A and I:

$$\sigma_{A-I} = \sqrt{\sigma_A^2 + \sigma_I^2 - 2r_{AI}\,\sigma_A\sigma_I}$$

**Indicate shifts toward unfavorability.

shift toward favorability, represented by a critical ratio of 4.45 and a correlation of .80 ±.04 between A and I judgments.

However, on the proposition of teachers' certificates there was only a slight shift toward favorability, represented by a critical ratio of .47, while the correlation was .90 ±.03.

The city manager proposition showed a slight shift toward opposition between the A and I scales, represented by a critical ratio of 1.43, with a correlation of .97 ±.01.

From these data it may be concluded that the degree to which an attitude will shift may be determined in part by the inherent nature of the proposition which is being used.

TABLE III

MEANS, STANDARD DEVIATIONS, AND CRITICAL RATIOS OF A AND I JUDGMENTS BY PROPOSITIONS

Proposition	Mean A	σ A	Mean I	σ I	cr* $\bar{a}-\bar{i}$
Half-time schedule	4.55	1.61	5.03	1.62	4.45
Teachers' certificates	4.92	1.25	5.01	2.12	.47
City manager plan	3.34	1.80	3.24	1.79	1.43

*The following formula was used in determining the reliability of the difference between A and I:

$$\sigma_{\bar{I}-\bar{A}} = \sqrt{\sigma^2_{\bar{A}} + \sigma^2_{\bar{I}} - 2r_{AI}\,\sigma_{\bar{A}}\,\sigma_{\bar{I}}}$$

EFFECT OF SCALE CONSTRUCTION AS AFFECTED BY MILD AND RADICAL STATEMENTS, NUMBER OF POINTS IN SCALE, NON-VERBAL SCALE, DESIGNATION OF NEUTRAL POINT ON SCALE

The shift in attitudes on the A and I judgments may be partly explained as due to the inherent nature of the proposition. However, the fact that there was a difference in the amount of shift when different scales were used with the same proposition suggested the possibility that these shifts might be brought about because some of the statements were phrased so radically that they aroused opposition or elicited support to the proposition.

In order to test this hypothesis, the attitude toward the teachers' certificate proposition of three classes were checked by the use of three different scales. The milder scale was constructed by eliminating the statement at each end of the extreme scale, thus making a five-point measure, from which supposedly prejudicing radical statements were eliminated. This rating scale was used in an effort to determine whether individuals would be more likely to mark attitudes at the ends of the scale when these positions were indicated by conservative rather than radical statements.

A comparison of the A and I judgments as given in Table IV shows that when milder statements were used in the scale the critical ratio of the shift toward favorability was not sta-

tistically reliable. The correlation between the two judgments was .88 ±.04.

However, the reliability of the test as indicated by the correlation of first and last general judgments was reduced to .71 ±.07 when a scale without any statements was used. Apparently the use of definite statements to represent points on the scale increases the reliability of attitude scales.

The use of a seven-point scale indicated considerable stabilization between the two administrations, as there was practically no shift between the initial A judgment and the final I judgment.

When a five-point scale was used there was a difference in means of .30 points between the initial A and the final I judgments, indicating greater favorability. A difference of .18 points in the two standard deviations would indicate that the scale with fewer statements would prove to be less stable measure than one containing a number of statements.

The type of scale used seemed to have little bearing in regard to the tendency to cluster around the neutral zone, as is shown by a standard deviation of 1.37 for the scale where no statements were used, a standard deviation of 1.18 when the seven-point scale was used, and a standard deviation of 1.02 when the five-point scale was administered.

TABLE IV

MEANS, STANDARD DEVIATIONS, AND CRITICAL RATIOS OF A AND I JUDGMENTS ON TEACHERS' CERTIFICATE PROPOSITION, WITH SEVEN-POINT SCALE, FIVE-POINT SCALE, AND SCALE WITH NO STATEMENTS

Scale	Mean A	σ A	Mean I	σ I	cr* $\bar{I}-\bar{A}$
Seven-point	4.85	1.19	4.84	1.18	- .47**
Five-point	3.37	1.20	3.67	1.02	1.55
No statement	.74	1.61	.43	1.37	1.89

POLARITY ACCORDING TO ATTITUDES

In the study of attitudes, polarization is a measure of the consistency of attitude, either favorable or unfavorable, which an individual maintains toward various aspects of a proposition. According to field theory, positive or favorable judgments tend to be internally consistent; that is, if an individual's general attitude toward a proposition is favorable, he is inclined to regard favorably a majority of the phases of that proposition on which he is rated subsequent to his indication of his general attitude of favorability.

However, truly negative attitudes are not necessarily consistent with each other; that is, the general attitude of a

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*The following formula was used in determining the reliability of the difference between A and I:

$$\sigma_{\bar{I}-\bar{A}} = \sqrt{\sigma^2_{\bar{A}} + \sigma^2_{\bar{I}} - 2r_{AI}\sigma_{\bar{A}}\sigma_{\bar{I}}}$$

**Indicates shift toward unfavorability.

person may be opposed to a proposition, but at the same time he is likely to be favorable to several aspects of it.

In this investigation, polarization of individual attitudes was determined by counting the number of responses on scales C to I inclusive which were consistent with the responses given on judgment A. Judgment B was omitted from this compilation, since it indicated the degree of the individual's familiarity with the plan and so had no bearing on the attitude.

As shown in Table V, the half-time schedule proposition seemed to elicit highly polarized affirmative judgments. The difference between the average number of consistent responses for those favoring the proposition and for those opposed to it is represented by a critical ratio of 12.2. This clearly represents a tendency for those who favor the proposition to favor it in a majority of the different phases tested.

POLARITY ACCORDING TO PROPOSITIONS

The determination of the degree of polarity of individual responses indicated that the results might be influenced by the nature of the proposition. Further investigation showed that another proposition which was highly polarized was that of teachers' certificates, which had a critical ratio of 20.0.

Data given in Table V indicate that on the city manager form of government proposition the negative attitude was nearly as highly polarized as the affirmative. Apparently some of the students recognized the form of government suggested as belonging to a definite category and their judgments tended to become polarized on the negative side rather than on the affirmative.

TABLE V

MEAN NUMBER AND STANDARD DEVIATIONS OF FAVORABLE AND OPPOSED RESPONSES CONSISTENT WITH A

Proposition	Mean No. Favorable responses consistent with A	σ of Favorable responses consistent with A	Mean No. Opposed responses consistent with A	σ of Opposed responses consistent with A	cr
Half-time schedule	3.22	.85	1.39	.66	12.2
Teachers' certificates	3.00	1.07	.34	.80	20.0
City manager	5.41	.70	5.83	1.09	1.32

FINDINGS

Shifts of Attitude Occurring within the Period of Administration

1. On the extreme scale when the half-time schedule proposition was used, there was a reliable shift toward favorability represented by a critical rationof 4.45 with a correlation of .80 ±.04 between A and I judgments.

2. The groups tended to be more heterogeneous in marking I judgments than in marking A judgments. This is shown by the fact that the I distributions have slightly higher standard deviations than the A distributions.

Shifts of Attitude between Administrations, as Affected by Scoialized Oral Discussion, Written Discussion, Propaganda, Prepared Analysis

1. On the proposition of teachers' certificates the general judgment on A when the five-point scale was first given was changed toward a more favorable judgment on A when the scale was repeated a few days later after some arguments for and against the plan had been read to the class. The correlation between the two scales was .55 ±.11. However, intervening discussion seemed to improve the reliability of the second

administration of the scale as judged by correlation between A and I judgments, for when the scale was first given the correlation between A and I judgments was .88 ±.02, whereas when the scale was administered the second time the correlation was .96 ±.01, which would indicate that crystalizing argument tends both to shift judgments and to make the use of the scale more reliable in its second administration.

2. The city manager proposition showed a slight unreliable shift toward opposition between the A and I scales represented by a critical ratio of 1.43. The correlation, however, was high, being .97 ±.01. When a J judgment was taken after a propagandizing statement regarding the proposition, there was an immediate shift toward opposition between the I and J judgments, represented by a critical ratio of 5.47. The correlation between the two judgments was .78 ±.06. Apparently very simple arguments will cause reliable shifts in judgment. When the scale was used again a few days later there was a slight tendency for these J judgments to shift back toward favorability. However, they were still reliably below the original judgments on the proposition.

3. There was a slight tendency for the groups to scatter more in their ratings on the second administration of the scale, as evidenced by slightly higher standard deviations on the second administration.

4. With the half-time schedule proposition when there was general oral discussion of the proposed plan between the first and second testing, the shift toward opposition from the mean of the A judgment on the initial testing to the mean of the I judgment on the terminal testing was .11 points, with the group appearing to be more scattered in their final judgments, as evidenced by an increase in the standard deviation for the I distribution of .67 points.

5. With the half-time proposition when there was written crystalization of individual attitudes, between the first and second administration of the scale there was a shirt toward favorability of .4 points from the mean of the initial A judgments to the mean of the terminal I judgments. There was a decrease of .17 points between the two standard deviations, which would indicate that when the individuals in the group crystalized their attitudes with decreased outside socializing influences, the group tended to be more homogeneous than when oral discussion was used as a means of crystalization.

Shifts of Attitudes by Propositions

1. The use of the half-time schedule proposition brought about a reliable shift toward favorability, represented by a critical ratio of 4.45. The correlation between A and I judgments was .80 $\pm$.04.

2. On the proposition of teachers' certificates there was an unreliable shift toward favorability represented by a critical ratio of only .47 while the correlation was .90 ±.03.

3. The city manager proposition showed a slight unreliable shift toward opposition between the A and I scales represented by a critical ratio of 1.43, with a correlation of .97 ±.01.

Effect of Scale Construction as Affected by Mild and Radical Statements, Number of Points in Scale, Non-verbal Scale, Designation of Neutral Point on Scale

1. When milder statements were used on the scale the critical ratio of the shift toward favorability of the teachers' certificate plan was only .55 and the correlation was .88 ±.04.

2. The reliability of the test as indicated by the correlation of first and last general judgments was reduced to .71 ±.07 when a scale without any statements was used.

3. The use of a seven-point scale indicated considerable stabilization between the two administrations, as the difference in means between the initial A judgment and the final I judgment was .01 of a point toward opposition, and the standard deviation increased only .01 between these two judgments.

4. When a five-point scale was used there was a difference in means of .30 points between the initial A and the final I judgments, indicating greater favorability. A difference of .18 points in the two standard deviations would indicate that the scale with more statements would prove to be a more stable measure.

5. The type of scale used seemed to have little bearing in regard to the tendency to cluster around the neutral zone, as is shown by a standard deviation of 1.37 for the scale where no statements were used, a standard deviation of 1.18 when the seven-point scale was used, and a standard deviation of 1.02 when the five-point scale was administered.

Polarity according to Attitudes

1. The half-time schedule proposition seemed to elicit highly polarized affirmative judgments. The difference between the number of inconsistent responses for those favoring the proposition and for those opposed to the proposition was represented by a critical ratio of 12.2.

Polarity according to Propositions

1. A proposition which was highly polarized was that of teachers' certificates. There we find a critical ratio of 20.0 between the mean number of responses consistent with opposed judgments and the mean number of responses consistent with favorable general judgments. On the city manager form of government the negative attitude was nearly as highly polarized as the affirmative.

CONCLUSIONS

1. Attitudes as measured by attitude scales are probably more unstable than the reliability coefficients would indicate, since there may be definite trends in the shifting of judgments as well as a chance shifting which changes the rank order of the subjects.

2. Certain factors within the scales themselves may account for shifts of attitudes. These may be factors which operate during the administration of the scale, such as the time element which would allow for a certain amount of crystalization if not an actual shift, the fact that thought-provoking questions are being asked which would enable the subject to crystalize his opinion, or the inherent nature of the proposition itself.

3. In general, the results yielded by attitude scales will be more reliable if they follow open discussion or concern propositions about which there has been some opportunity for the subjects to formulate opinions.

4. Mechanical construction of scales seems to have little bearing upon results except that scales which mark definite points by means of statements are more reliable. They may yield more accurate results if there are very specific

statements of attitudes so that the subjects may choose definite statements to which they may subscribe.

5. Some support is found for the field theory contention that positive attitudes tend to have greater polarity than negative ones, of one concedes that some attitudes represent a "positive opposition."

6. Polarization seems to be an important factor, that is, non-polarized attitudes are likely to be unstable attitudes.

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