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SIGNED:

[Signature]
The present paper was done during the second semester of my studies at the University of Arizona, Graduate College, as a Fulbright Scholar from Berlin, Germany.

I wish to express my sincere thanks to Prof. Dorothy I. Marquart for the suggestion of the problem and for her inspiration and guidance which enabled me to complete this study.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>STATEMENT OF PROBLEM</td>
<td>9</td>
</tr>
<tr>
<td>APPARATUS AND SUBJECTS</td>
<td>11</td>
</tr>
<tr>
<td>PROCEDURE</td>
<td>16</td>
</tr>
<tr>
<td>RESULTS</td>
<td>21</td>
</tr>
<tr>
<td>DISCUSSION</td>
<td>42</td>
</tr>
<tr>
<td>SUMMARY</td>
<td>49</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>51</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>52</td>
</tr>
</tbody>
</table>
**LIST OF TABLES**

| I. | The Unfavorable, Neutral and Favorable Responses as Scores and as Percentages Given by Group A and Group B at the Three Levels of the Experiment; the Chi-Square of the Difference between the Groups and its Corresponding Level of Significance | 22 |
| II. | Comparison of Response Shifts from the First to the Second Level of the Experiment between A with respective Subgroups and B with Subgroups | 29 |
| III. | Comparisons of Response Shifts from the Second to the Third and from the First to the Third Level of the Experiment between Group A and Subgroups with Group B and Respective Subgroups | 32 |
| IV. | Comparison of Response Shifts from the First Level to the Second Level of the Experiment within Groups A and B | 33 |
| V. | Comparison of Retention of Fact Statements by Group A and Group B | 37 |
| VI. | Comparison of Retention of Sources by Group A and Group B | 38 |
| VII. | Number of Subjects of Group A and of Group B Ranking the Sources in Each of the Eight Ranks | 40 |
### LIST OF FIGURES

1. The unfavorable, neutral and favorable responses as well as the net-responses (unfavorable minus favorable responses) in percentages given by Group A and Group B at the three levels of the experiment...

2. Average response scores given by Group A and Group B at the three levels of the experiment. The average values were calculated by multiplying the unfavorable responses by 3, the neutral by 2 and the favorable by 1 and dividing the sum total by the number of possible responses at each level and for the two groups separately...

3. The percentages of unfavorable, neutral and favorable responses at the first level of the experiment and the percentages of response shifts from the first to the second level and from the second to the third level of the experiment. Data for the 178 subjects who served during all three levels of the experiment...

4. Net-response shifts from the first level of the experiment to the second, from the second to the third level, and from the first to the third level for Group A and Group B...

---

<table>
<thead>
<tr>
<th>FIGURE</th>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The unfavorable, neutral and favorable responses as well as the net-responses (unfavorable minus favorable responses) in percentages given by Group A and Group B at the three levels of the experiment.</td>
<td>23</td>
</tr>
<tr>
<td>2.</td>
<td>Average response scores given by Group A and Group B at the three levels of the experiment. The average values were calculated by multiplying the unfavorable responses by 3, the neutral by 2 and the favorable by 1 and dividing the sum total by the number of possible responses at each level and for the two groups separately.</td>
<td>24</td>
</tr>
<tr>
<td>3.</td>
<td>The percentages of unfavorable, neutral and favorable responses at the first level of the experiment and the percentages of response shifts from the first to the second level and from the second to the third level of the experiment. Data for the 178 subjects who served during all three levels of the experiment.</td>
<td>26</td>
</tr>
<tr>
<td>4.</td>
<td>Net-response shifts from the first level of the experiment to the second, from the second to the third level, and from the first to the third level for Group A and Group B.</td>
<td>28</td>
</tr>
<tr>
<td>LIST OF FIGURES (contd.)</td>
<td>Page</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>------</td>
<td></td>
</tr>
<tr>
<td>5. Response shifts from first to second level for all 207 subjects</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td>6. Net-response shifts from first to second level for all 207 subjects</td>
<td>28</td>
<td></td>
</tr>
</tbody>
</table>
INTRODUCTION

In the field of communication research, it was Hovland who first realized that a complete analysis of the characteristics of the communicator is of importance in determining the effectiveness of a communication designed to modify opinions. In general, the usual studies of prestige are somewhat related to this problem. The findings of these studies do not contribute directly to our problem, but the discussion of them may serve to clarify the ground for the theoretical implications emerging from the experimental study of the role of the communicator.

Observed apparently irrational actions and opinion changes in given situations brought the attention of social scientists to a study of prestige as a significant factor. Prestige has the potentiality of modifying opinions. In this research the communication material was disregarded as being irrelevant. Lorge (8) and Sherif (11) as well as others (3, 9, 10) have carried out experiments concerning prestige. In general, the designs of these experiments are similar. Subjects are asked to rate or rank statements each of which is attributed to an author. In delayed sessions, the same statements, but then attributed to different authors, are re-rated. Subjects are, also, at some time during the
experiment, asked to rank or rate these authors by name to determine their prestige. In general, the results of these experiments reveal that subjects' opinions were manipulated and changed in a positive or negative direction apparently depending upon the rank of the author. The experimenters conclude that the prestige of the author modified the subjects' judgments regardless of the merit of the statement itself. The theory underlying the concept of prestige is that an "unchanged object of judgment" undergoes, with the arbitrary attachment of a prestige factor, a change of evaluation. The communication as such plays no role in this process.

Krech and Crutchfield (7) in their recent publication name Duncker as probably the first experimenter to challenge the classical interpretation of the operation of prestige. The object, as a part of a larger setting, partially determines the subject's perception. The individual perception of the whole, the communication as a part of the frame of reference (setting), is the basis for the subject's judgment. Prestige for the subjects suggests the frame of reference.

Asch (1) in his critique of the doctrines of imitation, suggestion and prestige, views prestige as suggestion thus conforming with Duncker's proposition. Asch objects to the old idea that a stimulus representing an object, statement,
etc., elicits a response at one time and at a later time the "identical stimulus" is responded to differently due to the prestige factor. He feels that the misconception of identical stimuli is apparent. The stimulus situation is first the statement and the author combined, and then the identical statement and a different author. Thus, the alteration of the "prestige factor" obviously brings about a reorganization. Asch concludes, "the fundamental fact involves a change in the object of judgment rather than in the judgment of the object" (2, p. 424). He makes it clear that the communication is not an isolated entity, but is perceived in a context or setting. Krech and Crutchfield (7) emphasize that "the reinterpretation (of prestige) is significant because (1) it places changes in judgment following prestige suggestion in the same category as judgments based upon reasonable grounds and thus (2) it again points to the applicability of the basic principles of perception, learning, and thinking to the phenomena of prestige suggestion" (7, p. 338). It is evident from the foregoing discussion that the communicator has to be viewed as a cue to a context of which the communication is perceived as a part.

Intensive systematic studies of the mass communication process originated in the Army's Information and Education Division, the function of which has been to study soldiers'
attitudes and opinions to controversial topics. Hovland, Lumsdaine and Sheffield (4) reported some of these studies on the effectiveness of films. They related the opinion changes produced by the film to the subjects' opinions of the truthfulness of the material presented and to their conceptions of the purpose of the film. They stated that opinion changes depend "not only on learning of the material—but also on the acceptance of the material presented. Men might have learned what the film 'said,' but if the film presentation were viewed with scepticism or suspicion they might not accept the interpretation as the correct one" (4, p. 98). Their results show that subjects who assumed the film to be designed for propaganda purposes were immediately after watching the film less influenced than others. Furthermore, when they checked later for opinions and factual data their findings revealed a forgetting of factual information and a reversion of soldiers' opinions. However, they noticed that some subjects showed more agreement with the film after an interval of nine weeks than immediately after viewing the film. They called this increment in opinion shift the "sleeper effect." They say, "some of the effects may be 'sleepers' that do not occur immediately but require a lapse of time before the full effect is evidenced" (4, p. 132). Among other hypotheses advanced to account for the "sleeper effect,"
they suggested that "some of the themes of the presentation were initially accepted and others were initially discounted as having a biased source" (4, p. 197). Their hypothesis implies that "forgetting is the rule but the source of an item of information is more quickly forgotten than the material presented" (4, p. 197). They suggest that the subject probably retains the general idea (has a feeling that these things go this way) long after he has forgotten the source of the material. The conditions of their experimentation, however, did not allow any clear-cut inference as to the actual operation of the suggested "factors" involved.

Hovland and Weiss (5) designed an experiment in order to test the above stated hypothesis. In their experiment, they presented identical reading passages some of which were attached to high credibility sources and some to low credibility sources. A booklet contained one article on each of four different topics. The publication source was always given below the article. Two of the articles were attributed to high credibility sources and two to low credibility sources. They assumed that in their experimental situation the effectiveness of the "factors" involved in their hypothesis should be maximized. They felt that articles coming from such sources as Pravda would be discounted due to the nonacceptance of the source. This
would first result in a separation of what is remembered and what is believed, but if, with the passage of time, the content "sticks" after the source is forgotten, the subject may then accept the content. This is the assumed process within the individual which underlies the phenomenon of the increment of opinion shifts with the passage of time. Therefore, the results of this experiment appear to support their formerly presented hypothesis. The two groups did not significantly differ in the amount of factual material retained but the net shift of opinions showed that "there was a decrease after a time interval in the extent to which subjects agreed with the position advocated by the communication when the material was presented by trustworthy sources, but an increase when presented by untrustworthy sources" (5, p. 650).

Two recent experiments (6, 12) using radio and personal oral presentation have, however, raised some doubt as to the existence of the "sleeper effect" as defined by Hovland. Kelman and Hovland's experiment (6), employing radio as the medium of communication, in general reveals results similar to those obtained in the Hovland and Weiss study. However, the experimenters admit that they found only a small and not significant increase (sleeper effect) in opinion shifts when the communication source originally was perceived as negative.
The other study was done by Weiss (12). He found that
the effect of the communication upon opinions, under the
conditions of his experiment, was greatest for all groups
immediately after the communication and decreased at a
later period of time. Weiss says that his results still
evidence a "sleeper affect" because the reversion of
opinions was less for the "discounting group" than for the
control group. Because the "sleeper effect" in the sense
of an increment of opinion net shift seems to depend on
the disappearance of the discounting motive with the passage
of time, Weiss felt that a difference in reversion of
opinions with greater shift shown by the nondiscounting
group than by the discounting group is all that is re­
quired to reveal the "sleeper effect."

It is evident that, if the disappearance of a dis­
counting motive depends upon time, it would be a problem
to find the point in the time continuum at which the dis­
counting motive would no longer be effective. However,
increment in the net shift of opinions, it is said, depends
also upon the content retained. Thus, it seems possible
that at the moment of the disappearance of the tendency
to discount the material presented, the retained factual
material, which appears to follow the usual process of
forgetting, might not be able to produce an increment in
net opinion shifts.
This argument seems, to the writer, to be weak because a slight shift in opinion produced by an in general discounted source would naturally not change as much in returning toward original opinions as would a large shift of opinions produced by what is supposedly felt to be a trustworthy source.

Kelman and Hoyland (6) stated clearly enough that "in many cases the removal of the negative effects of rejection would more than offset the loss of forgetting the content, and thus produce a net increase in agreement with the communication (sleeper effect)" (6, p. 327). If we define the "sleeper effect" in this manner, everyone must admit that it has not been universally demonstrated in situations which might be expected to produce it.
STATEMENT OF PROBLEM

Our experiment was designed to check for the possible existence of Hovland's sleeper effect, to determine whether the content of the communication is learned and retained to the same extent regardless of the supposed acceptibility of the source, and to check a suggestion—inferrred from the experimental data of the Hovland and Weiss study (5)—that a low credibility source eventually changes opinion (in terms of net shift) more than a high credibility source.

Hovland and collaborators (5, 6, 12) claim that the effect of a communication is a joint function of content and acceptance factors. Their experimental data indicate that learning and retention of the content of the material presented is probably not influenced by the nature of the communicator. The perception of the communicator as trustworthy or untrustworthy, however, determines the subjects' acceptance or rejection of the material. The experimenters argue that an untrustworthy source probably motivates the subjects to discount the material presented. With the passage of time, the tendency to discount the material would be "discounted" and the retained content would "in many cases" result in an increment in net opinion shift and thus evidence the existence of the "sleeper effect."

If this proposition is true, we too should expect, under the conditions of our experiment, a noticeable difference between the groups in opinion shifts immediately after the communication due to a difference in credibility of the sources. The low credibility source would be responsible for the "discounting motive" within the individuals. With the passage of time, we should expect an increment in opinion shift for the "discounting group" due to the disappearance of the discounting tendency and to the content retained. Furthermore, the experimental data of the Hovland and Weiss (5) study indicate that eventually the long-time effect of a communication advocated by an untrustworthy source may be greater than the effect immediately after the communication and eventually surpass the long-time effect of the communication advocated by an untrustworthy communicator.
APPARATUS AND SUBJECTS

The nature of the problem to be studied required the formulation of reading passages, an "Opinion Questionnaire" and an "Information Test" to be used as tools in the three sessions of the experiment.

The nature of opinion change suggested the selection of an issue which would meet the requirements of having optimum significance for the individuals, of being more or less current at the moment and of having some relation to psychology. It was assumed that the controversial current issue on the effects of television upon the social life of the family, upon the personality and in particular upon the development of children and juveniles would fit best as an experimental tool.

A. **Apparatus**

A. **The Articles.** Two "abstracts of articles" on the effect of television were formulated on the basis of a number of articles upon the effects of television issued in scientific periodicals and popular magazines. Both "articles" represent a selection of factual happenings organized and interpreted to the disadvantage of television and its programs. These "abstracts of articles" have been used as reading passages in our experiment.
"The Television Crime Show" refers to crime shows in general and to crime shows broadcast as children's programs in particular. Examples are given to illustrate the detrimental effects of television upon children. The opinions of executives of television companies are confronted with the arguments of educators, parents and scientists. The following conclusion is made: "It is evident that the American television programs need to be revised. There is no place for crime dramas in the television schedule of the future if television is to become a promoting force in the advancement of American culture."

"Television: A Challenge to the Family and Personality," is a résumé of the results of studies carried out by social scientists. Statements are made concerning the viewing hours of television and the effects of television watching upon the behavior of family members and upon family life in general. Again, the influence of television upon the child's development and personality formation is emphasized. Finally, it is concluded that "the already noticed disorganization of the social life of the American family has its complement in the process of disintegration of the individual. There is no doubt that these facts indicate that television produces a challenge to the American social structure." For convenience in our further discussion, we will refer to these "abstracts of articles" simply as
articles. They are quoted in full in the appendix of this paper.

The experimental variable is the source of the original publication of the articles. Both articles were said either to be "abstracts from articles published in True Human Experiences" or "abstracts from articles published in American Psychological Association Reports on Social Research." Neither of these magazines exists. In choosing these names as publication sources of our articles, we assumed that True Human Experiences would be a low credibility source and the reports of the American Psychological Association a high credibility source.

B. The Questionnaires (see Appendix for reproductions). The Opinion Questionnaire consisted of eight items. Each of the items contained three possible statements: a favorable, an approximation of a neutral and an unfavorable statement on the effects of television. These items were thought to measure attitudes toward television in general. However, every item was directly related to the articles.

The Information Test contained 11 information items plus two questions asking for the source of original publication of the articles read. Each of these items contained three statements: the right statement (right

1. Only for convenience, the opinion scale has been named a questionnaire.
according to the statement in the article) and two other statements which the author of the supposed articles would consider false. The items of both the opinion and information questionnaires were multiple choice in character.

Finally, the ranking task consisted of a list of eight magazines including the two used in our experiment as original publication sources. An additional question, on the same sheet of paper, asked the subjects whether they had more confidence in reports told by friends and well-known writers or in reports of experiments by social scientists. They were asked to state the basis for their opinions and whether they felt that the average college student would agree with their position.

II. Subjects

Subjects for this experiment were students in a second semester introductory class of psychology at the University of Arizona. The total enrollment of this class is approximately 250 students. Due to the absence of students in one or two of the sessions of the experiment, data from a number of questionnaires had to be eliminated.

The lecture-room used for the class has seats on an inclined plane organized in half-circles with aisles between the three segments: A, B and C. All students seated in sections A and C, the outer sections, were used as subjects in Group A. Students seated in section B, the middle
section, were used as subjects in Group B.

A total of 178 students participated in all three sessions of the experiment. Of these 178 students, 116 were female and 62 were male students. In academic classification, 94 were Freshmen, 51 were Sophomores, 24 were Juniors, six were Seniors, two were Graduates and one student was unclassified.

Eighty-five students were subjects in Group A; of which 59 were female and 26 were male students. Ninety-three students were subjects in Group B; of which 57 were female and 36 were male students.

A total of 207 students participated in the first two sessions and all of the data obtained from this group can be used for the comparison of response shifts from the first to the second level of the experiment.
PROCEDURE

The experiment involved three sessions. One session was devoted to the determination of the subjects' attitude toward the effect of television. Seven days later, during a second session, the subjects were asked to read the passages described above and to reveal their opinions by answering the questionnaires a second time, and to take an information test to show how many factual statements they could remember. Three weeks after the second session a third session was used for the administration of the delayed opinion and recall series. In addition, during the third session the source-ranking test was performed.

I. First Session of the Experiment

The instructor of the psychology class introduced the author of this paper and told the students that we needed their opinions for the author's master's thesis and that she was sure that they would be willing to cooperate. Then, while listening to the lecture, the students were handed the questionnaires turned face down. When each student had received a paper he was asked to put his seat-number, his year in college and his age and sex on the front page in the upper right corner. The subjects were then told, "This is an opinion questionnaire. Will you
please indicate your opinions by checking one statement for each item. Please answer all the items. We shall analyze the responses, and the results will be reported to you later."

II. Second Session of the Experiment

(Administration of the Opinion Questionnaires and the Information Tests after the subjects had read the articles.)

Seven days after the first session, a second session was required so that each subject could read the passages (articles), could indicate his opinions immediately after the reading and could show how much he had learned. The students were told by their instructor that a little more help was needed on the thesis. They were told, "First we will give you two abstracts of articles. Read them over carefully, as we shall test you on their contents. Notice the source of the articles. If you have time, you may read the articles a second time. The test will not be counted toward your grade, but do as well as you can, please."

The articles for Group A were attributed to the American Psychological Association Reports on Social Research; the articles for Group B, to True Human Experiences. The reading passages were handed to the students turned face down. When each student had received his articles, a signal was given to start reading.

After 12 minutes, the students handed their reading
passages to the aisles. The papers were collected and, at
the same time, the opinion questionnaires and the infor-
mation tests were handed to the students, again turned
down. Then they were instructed as follows: "Please
write your seat number on the first sheet. The first two
sheets are for your opinions. Indicate what you believe
to be the true answer to each item. Please answer all
items. On the last two pages you will find the information
items. Check those statements which come as closely as
possible to the statements in the articles." The students
needed approximately eight minutes to complete the series.
A total of about 35 minutes was needed for this session.

III. Third Session of the Experiment
(Administration of the Opinion Questionnaires and
the Information Tests as delayed measurement
of opinions and of factual material.)

The instructor told the students that two more
questionnaires were needed for the thesis. They were told
that the first two sheets of the questionnaires were to
measure their opinions and that the last two were to check
their retention of facts. Furthermore, they were told that
after they completed these questionnaires they would be
asked to do one more simple task and that seat numbers were
to be written on these source-ranking papers as well as on
the other questionnaires. The students were assured that
the seat numbers were to be used as an index only and would
not be connected with their names. Again, the lecturer talked while the sheets were being distributed face down. When everyone had his questionnaire, they were asked to start. The students needed about 20 minutes to check all 20 items. While collecting the questionnaires, the proctors handed out the source-ranking papers. The students completed this task in about 10 minutes.

There appeared to be good cooperation during all three sessions. However, in a few cases additional encouragement to answer all items was given.

From here on we will refer to the data obtained in the first session of the experiment as data at the first level of the experiment; data obtained in the second session as data at the second level of the experiment; etc.

For the analysis of responses, data were obtained by tabulating the responses to each item at all three levels of the experiment. This allows a division into three categories: unfavorable, neutral and favorable. Unfavorable statements claim that the effects of television are detrimental; therefore, an unfavorable statement is in agreement with the interpretation of the effects of television given by the articles.

The analysis of response-shifts is based upon data obtained by tabulating the shifts from the first to the second level of the experiment and from the second to the
third level, according to the categories mentioned above. The chi-square technique was applied to both the responses and the response-shifts.

Each correct response to an information item was counted as one right response, and the totals, in order to compare the results for the different groups, were translated into percentages.
RESULTS

I. The Results of the Opinion Questionnaires Obtained from the Analysis of Responses and Response Shifts

A. The Results of the Opinion Questionnaires for the Groups as a Whole.

1. Results of the First Level of the Experiment.

Table I shows, for the 178 subjects who served during all three sessions, the frequencies of unfavorable, neutral and favorable responses at the three levels of the experiment. Figure 1 represents the unfavorable responses and the favorable responses in percentages at the three levels, as well as the unfavorable minus the favorable responses as curves of net-response shifts. Figure 2 shows the response values for Group A in one curve and for Group B in a second curve. For each group the favorable statements were multiplied by one, the neutral statements by two and the unfavorable statements by three. The average value for each group at the three levels was calculated. The average values are shown in Figure 2.

Table I and figures 1 and 2 show that groups A and B differ mainly in the number of favorable responses. Group B made more favorable responses than did Group A. The difference between the two groups is significant beyond the five percent level.
### TABLE I

The Unfavorable, Neutral and Favorable Responses as Scores and as Percentages Given by Group A and Group B at the Three Levels of the Experiment; the Chi-Square of the Difference between the Groups and its Corresponding Level of Significance

| Type of Response | First | | | | Second | | | | Third | | |
|------------------|-------|------------------|------------------|------------------|-------|------------------|------------------|------------------|-------|------------------|------------------|------------------|
|                  | Group A Score | % | Group B Score | % | Group A Score | % | Group B Score | % | Group A Score | % | Group B Score | % |
| Unfavorable      | 140 | 20.59 | 163 | 22.15 | 267 | 39.28 | 331 | 44.98 | 212 | 31.18 | 248 | 33.70 |
| Neutral          | 386 | 56.76 | 370 | 50.26 | 341 | 50.43 | 309 | 42.11 | 405 | 59.55 | 392 | 53.26 |
| Favorable        | 154 | 22.65 | 203 | 27.59 | 72 | 10.59 | 96 | 13.04 | 63 | 9.27 | 96 | 13.04 |

| Chi-Square Value | 6.596 | | 9.305 | | 7.678 | |
| Level of Significance | .04 | | .01 | | .022 | |

Score = Raw Score
% = Raw Score translated into per cent; the per cent value is underlined.
Figure 1. The unfavorable, neutral and favorable responses as well as the net-responses (unfavorable minus favorable responses) in percentages given by Group A and Group B at the three levels of the experiment.
Figure 2. Average response scores given by Group A and Group B at the three levels of the experiment. The average values were calculated by multiplying the unfavorable responses by 3, the neutral by 2 and the favorable by 1 and dividing the sum total by the number of possible responses at each level and for the two groups separately.
2. Results of the Second Level of the Experiment.
(Data obtained from Opinion Questionnaires administered to the students immediately after reading the articles.) On the second questionnaire a relatively greater number of responses made by members of Group B than Group A were unfavorable. Table I (p. 22) contains the raw scores and the percentages of responses falling into each of the three categories. As can be seen from figures 1 and 2, Group B gave many more unfavorable responses than did Group A. The chi-square test revealed that the difference in responses between the groups is significant beyond the one per cent level. Furthermore, Figure 1 shows that, if we compare the responses of this level with the data at the first level of the experiment, the difference in favorable responses is now smaller; the difference in unfavorable responses is greater.

Figure 3 shows the response-shifts and the non-shifts for Group A and for Group B from the first to the second level of the experiment and from the second to the third level. The diagrams at the first level represent the number of responses in percentages (see Table I, p. 22). The width of each diagram represents the favorable; the depth, the neutral; and the height, the unfavorable, responses. Thus, the diagrams describe the expressed attitudes for groups A and B. They show a greater number of response
Figure 3.

The percentages of unfavorable, neutral and favorable responses at the first level of the experiment and the percentages of response shifts from the first to the second level and from the second to the third level of the experiment. Data for the 178 subjects who served during all three levels of the experiment.
shifts toward an unfavorable opinion in Group B than in Group A. This is obvious from the comparison of the height of the diagrams. The comparison of the width shows that there were relatively few shifts to a favorable opinion, but more of these occurred in Group A than in Group B. As can be easily seen from the comparison of the differences between the diagrams at the first level with the diagrams at the second level for the two groups separately, Group B is less stable in its attitude than Group A.

Figure 4 gives us an indication of the net-response shifts from the first to the second level of the experiment, from the second to the third and from the first to the third level for both groups. Between the first and the second level of the experiment, the two groups have an unfavorable net-shift value. This shift toward an unfavorable opinion of the effects of television was greater for Group B than for Group A. Table II indicates that this difference is not significant (see p. 29).

However, the results obtained from the questionnaires of all subjects who participated in both of the first two sessions of the experiment (N = 208) not only show the same trend, but the difference between Group A and Group B almost attains the one per cent level of significance (see Table II; P = .014). Figures 5 and 6 show the results of this group graphically. The similarity of Figure 5 with
Net-response shifts (shifts to less favorable statements minus shifts to more favorable statements) from the first level of the experiment to the second, from the second to the third level, and from the first to the third level for Group A and Group B. Data in percentages. 10mm = 10 per cent.

Figure 5: Response shifts from first to second level for all 207 subjects. (For key, see Figure 3.)

Figure 6: Net-response shifts from first to second level for all 207 subjects.
TABLE II

Comparison of Response Shifts from the First to the Second Level of the Experiment between A with Respective Subgroups and B with Subgroups

<table>
<thead>
<tr>
<th>Group</th>
<th>Chi-Square Test</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>178 Ss: Group A - Group B</td>
<td>2.644</td>
<td>.27</td>
</tr>
<tr>
<td>207 Ss: Group A - Group B</td>
<td>8.719</td>
<td>.014</td>
</tr>
<tr>
<td>With Recall: Group B - Group A</td>
<td>8.832</td>
<td>.01</td>
</tr>
<tr>
<td>Without Recall: Group B - Group A</td>
<td>2.547</td>
<td>.28</td>
</tr>
<tr>
<td>Female Ss: Group B - Group A</td>
<td>9.045</td>
<td>.012</td>
</tr>
<tr>
<td>Male Ss: Group B - Group A</td>
<td>3.121</td>
<td>.21</td>
</tr>
</tbody>
</table>
the diagrams for the second level of Figure 3 (p. 26),
and between Figure 6 and the results represented at the
second level in Figure 4 (p. 28) are readily apparent.

3. Results of the Third Level of the Experiment.
(Data obtained from the Opinion Questionnaires administered
to the students three weeks after the reading of the
articles.) Table I (p. 22) shows the frequencies of responses
at the third level of the experiment for Group A and for
Group B. The percentages of unfavorable, neutral and
favorable responses are represented in Figure 1 (p. 23). 
The values in Figure 2 (p. 24) represent the average numbers
of responses for the two groups calculated according to the
method described on page 21. Group B, as at the first
level of the experiment, made more favorable and also more
unfavorable responses than did Group A. Figure 1 (p. 23)
shows that, if we compare the relative difference between
the favorable and the unfavorable responses at the first
level with those at the third level of the experiment,
there is a noticeable difference between the favorable
responses and also between the unfavorable responses of the
two groups. Furthermore, the net response values indicate
that Group B, as at the first level, is either less un-
favorable or more favorable to television than is Group A.
Table I (p. 22) shows that the difference between the groups
is significant at the 2.2 per cent level.

The diagrams of the third level in Figure 3 (p. 26) represent the response-shifts from the second to the third level as indicated by the arrows. As can be seen in this figure and also in Figure 4 (p. 28), the net-response shifts are toward a favorable view for television for both groups. A greater number of favorable responses was made by the members of Group B than of Group A. The difference between Group A and Group B in shift values is not significant (see Table III).

Furthermore, Figure 4 (p. 28) shows the net-response shifts for both groups from the first to the third level. As can be seen, the net-shifts are unfavorable for both groups. Table III contains the result of the chi-square test of this difference. The difference is not significant (P = .38).

B. The Results of the Opinion Questionnaires for the Subgroups of Groups A and B. The results of the subgroups reveal differences which resemble closely those found for the groups as wholes.

1. Results at the Second Level of the Experiment. Table IV shows that the differences of responses given by subjects with recall of the source and subjects without recall of the source is significant beyond the one per cent level in Group B but is not significant for Group A. That
TABLE III

Comparisons of Response Shifts from the Second to the Third and from the First to the Third Level of the Experiment between Group A and Subgroups with Group B and Respective Subgroups

<table>
<thead>
<tr>
<th>Group</th>
<th>Shifts from 2nd to 3rd Level</th>
<th>Chi-Square</th>
<th>P</th>
<th>Shifts from 1st to 3rd Level</th>
<th>Chi-Square</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group B - Group A</td>
<td></td>
<td>2.679</td>
<td>.27</td>
<td></td>
<td>1.997</td>
<td>.38</td>
</tr>
<tr>
<td>With Recall at 2nd Level: Group B -</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group A</td>
<td></td>
<td>.358</td>
<td>.84</td>
<td></td>
<td>3.589</td>
<td>.17</td>
</tr>
<tr>
<td>With Recall at 2nd Level but not at</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd: Group B - Group A</td>
<td></td>
<td>.690</td>
<td>.71</td>
<td></td>
<td>2.730</td>
<td>.26</td>
</tr>
<tr>
<td>Without Recall: Group B - Group A</td>
<td></td>
<td>1.329</td>
<td>.52</td>
<td></td>
<td>0.553</td>
<td>.76</td>
</tr>
<tr>
<td>Female Ss: Group B - Group A</td>
<td></td>
<td>0.174</td>
<td>.92</td>
<td></td>
<td>1.710</td>
<td>.44</td>
</tr>
<tr>
<td>Male Ss: Group B - Group A</td>
<td></td>
<td>6.189</td>
<td>.047</td>
<td></td>
<td>2.089</td>
<td>.36</td>
</tr>
</tbody>
</table>
TABLE IV

Comparison of Response Shifts from the First Level to the Second Level of the Experiment within Groups A and B

<table>
<thead>
<tr>
<th>Subgroups Tested</th>
<th>Group A Chi-Square</th>
<th>P</th>
<th>Group S Chi-Square</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>With Recall - Without Recall</td>
<td>2.387</td>
<td>.30</td>
<td>33.984</td>
<td>.01</td>
</tr>
<tr>
<td>Female - Male</td>
<td>.479</td>
<td>.79</td>
<td>2.471</td>
<td>.29</td>
</tr>
</tbody>
</table>
means that the subjects with recall of the source within Group B showed a significantly greater number of unfavorable responses than did the group without recall. We notice the same trend within Group A. This difference, however, is not significant (see Table IV).

Furthermore, the hypothesis was tested stating that the data obtained from female subjects are significantly different from those obtained from male subjects. Table IV shows that there is no significant difference between the responses of these two subgroups. In terms of net-response shift, however, the female subjects of both groups shifted more in the negative direction than their male colleagues. This difference is particularly obvious in Group B.

Table II (p. 29) shows the type of comparison of response-shifts between the subgroups of Group A and Group B when all the possible 207 subjects are considered. The difference between the number of response-shifts for subjects of groups A and B who recalled the source is significant at the one per cent level. On the other hand, there is no significant difference between the members of the two groups who did not recall the source. The difference between the number of response-shifts shown by the female subjects of Group A and Group B almost attains the one per cent level of significance. No significant difference in response-shifts between the male subjects of
the two groups could be found. In terms of net-response shift, all subgroups of Group B made more unfavorable shifts than did the subgroups of Group A.

2. Results at the Third Level of the Experiment. A brief inspection of Table III (p. 32) shows that the differences in response-shifts between the specified subgroups revealed only one result which is significant. The difference in response-shifts for the male members of groups A and B from the second to the third level of the experiment is significant beyond the five per cent level. The male subjects of Group B made significantly more shifts than did the male subjects of Group A.

In terms of net-response shifts, we find that from the second to the third level all subgroups except the female subjects of Group B show a higher net-shift value than the subgroups of Group A. Furthermore, we find that from the first to the third level of the experiment all subgroups of Group B but the subjects without recall of the source at all levels have a higher net-shift value than the subgroups of Group A.

II. Results of the Information Tests

A. Retention of Factual Statements. Retention of factual statements was measured immediately after the reading of the articles by the students and a second time three
weeks after reading the articles. Table V contains the number of right responses and also the percentages of the right responses at the second and at the third level of the experiment for Group A and Group B. The table shows that there were no significant differences between the results of groups A and B. The critical ratio of the difference between the percentages of correct responses of the two groups at the second level of the experiment is 1.24; the critical ratio of the difference at the third level is 0.36. When retention of factual statements was measured immediately after the reading of the passages, Group B remembered 20.06 percent more of the factual statements than did Group A. The delayed measurement of retention, however, revealed that now Group A retained more of the facts than did Group B.

B. Retention of Publication Sources. Table VI gives us the number and the percentages of members of Group A and Group B who recalled the source on the information test given immediately after reading the articles and three weeks after the reading. The standard deviation of the difference between the percentages of the two groups was calculated for the recall immediately after and three weeks after the reading of the articles. The critical ratios do not reveal significant differences. However, after reading the passages more members of Group A than of Group B recalled the source. After the time interval of three
TABLE V

Comparison of Retention of Fact Statements by Group A and Group B

<table>
<thead>
<tr>
<th>Group</th>
<th>No. Statements</th>
<th>Second Level Statements Recalled</th>
<th>Third Level Statements Recalled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Group A</td>
<td>935</td>
<td>776</td>
<td>82.99</td>
</tr>
<tr>
<td>Group B</td>
<td>1024</td>
<td>871</td>
<td>85.05</td>
</tr>
</tbody>
</table>

Difference: 2.06 0.74
Standard Deviation: 1.66 2.08
Critical Ratio: 1.24 0.36
### TABLE VI

Comparison of Retention of Sources by Group A and Group B

<table>
<thead>
<tr>
<th>Group</th>
<th>No. of Subjects</th>
<th>Recall of Source at 2nd Level</th>
<th>Recall of Source at 3rd Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>Group A</td>
<td>85</td>
<td>56</td>
<td>65.65</td>
</tr>
<tr>
<td>Group B</td>
<td>93</td>
<td>60</td>
<td>64.52</td>
</tr>
</tbody>
</table>

| Difference | 1.13 | 3.98 |
| Standard Deviation | 7.15 | 8.00 |
| Critical Ratio     | 0.16 | 0.49 |
weeks, more students of Group B than of Group A retained the publication source of the articles.

Not only the full name of the source but somewhat similar names were credited as positive recall.²

Table VII shows the number of members of Group A and Group B who ranked our hypothetical sources in each of the eight positions. The data indicate that the majority of students ranked the True Human Experiences lowest and the Reports of the American Psychological Association highest. This is true of both groups. However, relatively more members of Group B than of Group A ranked True Human Experiences in the top four positions and the Reports of the American Psychological Association into the bottom four ranks. This corresponds to the articles read. When True Human Experiences was given as the source of publication of the article it was viewed as a better source than when the Reports had been given as the source.

An inspection of the answers to the question whether the student would have more confidence in experiences told by friends and well-known writers or in reports of experiments carried out by social scientists revealed that the

². For example, such responses as Human Affairs, True Experiences, Human Relations, etc., were allowed as correct responses for True Human Experiences. Such names as a psychological magazine, Bulletin of Psychology, etc., were counted as correct, as well as American Psychological Association Reports on Social Research.
<table>
<thead>
<tr>
<th>Group</th>
<th>Source</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>True Human Experience</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>7</td>
<td>50</td>
<td>23</td>
</tr>
<tr>
<td>Group B</td>
<td>True Human Experience</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>9</td>
<td>5</td>
<td>16</td>
<td>40</td>
<td>10</td>
</tr>
<tr>
<td>Group A</td>
<td>Reports of the American Psychological Association</td>
<td>50</td>
<td>11</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Group B</td>
<td>Reports of the American Psychological Association</td>
<td>50</td>
<td>11</td>
<td>5</td>
<td>3</td>
<td>5</td>
<td>11</td>
<td>8</td>
<td>-</td>
</tr>
</tbody>
</table>

Group A: N = 85 Ss  All Ss participated in all three sessions of the experiment.
students trust the experiments of scientists more than popular statements. They say that they feel this way because scientists are looking for the truth, are not prejudiced, are systematical and are not emotionally involved in their studies. The majority believed that the average college student would agree with their statements.
DISCUSSION

Before starting a discussion of the main results of our experiment, it is important to analyze the indications of the credibility of the sources employed. As stated formerly (p. 8), we selected the communication sources, assuming that one would have high and one low credibility. We felt that True Human Experiences would be doubted, but that the American Psychological Association Reports on Social Research would be regarded as an acceptable source. The inspection of the data obtained at the first and second level of our experiment, however, showed that Group B, whose members read the articles attached to True Human Experiences, shifted opinions to a greater extent than did Group A. Therefore, all students were, at the conclusion of the third session of the experiment, asked to rank a list of communication sources and to indicate whether they would trust the statements made by friends and well-known writers more than they would trust reports given by social scientists. Most students in both groups indicated that they had more confidence in the reports of scientists than in popular reports. Furthermore, the majority of students credited the Reports of the American Psychological Association as the most trustworthy and True Human Experiences as the
least trustworthy of the eight sources (see Appendix for the list of the sources).

Unless some differential selection of subjects in the two groups can be found, this allows only two possible explanations: (1) either the low credibility source resulted in more shift of opinions than did the high credibility source, or (2) the students are either not aware of or will not admit their true attitude toward psychological findings. A number of comparisons were made to determine whether the two groups of subjects were drawn from the same population.

It is usually claimed that grade averages are higher for students sitting in the front of the room and for those directly in front of the instructor than for those sitting in the back of the room and in the peripheral sections. We checked the grades of the different sections and found no significant differences. The difference in grades in this course between the students sitting in the different sections was very small and showed a slightly higher grade average for the subjects of Group A than for those of Group B.

In order to check further for differences between the groups in contact with the instructor, the opinion shifts of the students sitting in the front rows of section B were compared with those of the subjects sitting in the
back rows of section B and with those subjects in Group A sitting in sections A and C. No significant differences were found between the number of shifts made by subjects who were sitting near the instructor and by those who were sitting farther away from the instructor. Also, the difference in opinion shifts between the subjects of Group B sitting in the front section of section B and the subjects of Group A sitting in section C was the same as the difference between the groups B and A as wholes.

The only criterion that we can assume for credibility is the stated opinions of the subjects. True Human Experiences is in our subjects' opinions a low credibility source. Thus, we must conclude that under the conditions of our experiment and after eliminating possible alternative explanations for the differences between the groups, the low credibility source is the more effective in changing opinions. The only way in which Group B differs significantly from Group A is in its initial attitude toward television. This might seem to indicate a selection of subjects which would invalidate the results. However, the difference in opinions obtained during the second session of the experiment is in the opposite direction of that found in the first session. Since the shift is in this direction, the original difference in attitudes between the groups strengthens the conclusions rather than
weakens them.

This may mean that the credibility of the source is not the most important variable but that the relationship of one's everyday experiences to the source of the articles may be exceedingly important. Articles published in True Human Experiences may come closer to the usual reading and personal experiences of our students and thus may be viewed as more realistic than articles from the American Psychological Association publications. The Reports of the American Psychological Association may have been viewed by the subjects as a part of the broad field of psychology with which they have had little personal experience.

If we discuss our data in terms of Hovland's theory, the significant difference in net-response shifts from the first to the second level of the experiment might be due to the interference of a discounting motive. If this is true, however, True Human Experiences must be the more acceptable source. The significant difference between the opinion shifts of the members of the two groups who recalled the source and the insignificant difference in shifts of those who did not recall the source appears to support this interpretation. In order for a discounting motive to appear one would probably have to be aware of the source of the articles.
The number of opinion shifts for the two groups from the second to the third level shows that the rate of opinion change for Group A was insignificantly less than the rate for Group B. Thus, if Group B really read the more acceptable source, the trend is in the direction predicted by Weiss (12) and consequently suggests the possible existence of a sleeper effect. If, on the other hand, Group A read the more acceptable source, the data of opinion shift obtained during the second level of the experiment would be contrary to practically all, if not all, findings in the field.

There are no significant differences in the amount of material recalled by the groups, a fact which agrees with the findings of Hovland and his various collaborators (5, 6, 12). This finding would fit Hovland's theory since he would postulate an equal content factor for the two sources. The difference in opinion shifts, which he would expect, would be due to the original appearance and later disappearance of a discounting motive. He says that the discounting factor disappears more rapidly than the content factor and thus agreement with the source increases. However, a closer inspection of the recall data of the Hovland and Weiss experiment (5) shows that the subjects immediately after the learning recalled 3.5 items more from the high than they did from the low credibility source. The
recall data four weeks after the communication showed that the subjects recalled 2.2 items less from the high credibility source than they did from the low credibility source. Exactly the same trend is evident in our experiment. Group B, who read the articles attached to True Human Experiences, answered correctly on the first information test 2.06 per cent more of the information items than did Group A. On the second information test, three weeks after the reading, Group A recalled 0.74 per cent more of the facts than did Group B.

Hovland's sleeper effect, defined as an increment in net-opinion shift when the original modification of opinions is due to an untrustworthy or low credibility source, could not be found under the conditions of our experiment. And even the criterion given by Weiss (12) for the demonstration of the sleeper effect was not lenient enough to allow definite conclusions. Weiss would have considered the sleeper effect as demonstrated if a "differential loss in the effectiveness of the communication" with greater loss for the non-discounting group than for the discounting group had occurred from the second to the third level of the experiment. Under the conditions of our experiment, the shift in opinions from the second to the third level of the experiment is insignificantly greater for Group B than for Group A. The data reveal that most of the differences
between the subgroups of Group A and Group B are in agreement with the general trend found in the two groups as wholes.

It is possible that, at least a part of the differences between the results obtained in this study and those obtained in the earlier investigations is due to the difference in method of presenting the material. All but one investigation in which the sleeper effect has been demonstrated made use of radio or motion picture films. We asked the subjects to read passages. Reading requires that the subject be active in order to understand the statements. Radio and films imprint their ideas upon the individual without the necessity of his taking an active part. Perhaps the active process involved in reading prevents the appearance of the discounting motive.

The results of this study, then, must be regarded as tentative and the study itself as exploratory. We need further studies making use of various types of material, of different groups of subjects, and of various methods of communication of the material. If Hovland's findings are true, the theoretical and practical importance of them is too great to condone their slow acceptance.
SUMMARY

Hovland and collaborators (4, 5, 6) have found that although untrustworthy sources initially change opinions less than do trustworthy sources, their effect increases with time. They refer to this phenomenon as the **sleeper effect**. Our study was designed to check for the existence of this effect by giving elementary psychology students articles to read. The articles read by the members of Group A were attributed to the *American Psychological Association Reports on Social Research*; those read by the members of Group B, to *True Human Experiences*. The subjects' opinions were measured one week before, immediately after, and three weeks after, the reading of the articles.

The initial change in attitudes was greater for Group B than for Group A. This probably shows that despite our expectations, *True Human Experiences* was the more acceptable source. The subjects, however, maintained that they would be much more willing to believe the Reports of the American Psychological Association than this popular-sounding magazine.

Three weeks after the reading of the articles, the opinions of both groups showed a partial reversion. Group B shifted insignificantly more than Group A. This shift,
if True Human Experiences is to be considered the more acceptable source, shows a slight tendency in the direction of the sleeper effect. Our difference is not great enough to allow definite conclusions.

More research is needed before final conclusions can be drawn. Such research should perhaps emphasize a comparison of effects of different methods of presentation of the materials.


APPENDIX

An abstract from an article published in _________.

The Television Crime Show

Television, hardly out of infancy as a major industry, has become a challenge to American life. More than 21 million American homes are equipped with television receivers. In 1952, there were 120 television stations on the air, and morning, noon and night the channels showed a relatively high proportion of half hour aberrations that in story and acting would make a Hollywood producer of class B pictures shudder.

American child crime rose in 1952 about nineteen percent and psychologists, leaders and law-enforcement officers vigorously pointed to television shows heavily laden with violence. It is a necessity that if we value our sanity, we evaluate the effectiveness of the current television programs.

The survey of Prof. Smythe states that in 1952 crime dramas occupied fifteen percent of the total television time. Of all children's programs, thirty percent were taken up with crime (sic) and Westerns. There is more violence shown on children's programs than on adult programs. Most of the time, the agent of violence is not acting in the enforcement of law and order. In 1952 nine out of ten incidents of violence were perpetuated by a criminal rather than by an agent of law and order. In the area of Los Angeles, for example, a family can be exposed to as many as 825 major crimes a week.

In a Boston suburb, a nine year old boy reluctantly showed his father a very poor report card, then proposed one way of getting at the heart of the matter. They could give the teacher a box of poisoned chocolates for Christmas. "It's easy, Dad, they did it on television last week. A man wanted to kill his wife, so he gave her candy with poison in it, and she didn't know who did it."

In Brooklyn, New York, a six year old son of a policeman asked his father for real bullets because his little
sister "doesn't die for real, when I shoot her like they do when Hopalong Cassidy kills 'em."

Sobbing betterly after killing his younger brother, a fifteen year old boy admitted to police that he fired the fatal shots after watching a Western movie on television.

Executives of television companies maintain that the violence-filled program is "a part of the larger category of escapist literature" and that the viewer gets rid of his tension by looking at this type of program.

Educators, parents and scientists strongly disagree with this idea of vicarious need satisfaction and object to the broadcasting of crime programs. S. H. Tulchin, a consultant psychologist in New York, says that there are individual differences in children's reaction to crime programs and that the same child reacts differently depending upon his mood at the moment. However, the personal selection of programs does not make sufficient allowance for this fact. Naturally the consequences are restlessness, sleeplessness, etc. The majority of the heads of the police departments of America's major television cities express the opinion that the dramas make the children more tolerant of criminals, less respectful of police. Smythe says that "the generally violent mood in which our society dwells must be counteracted with a more positive, relaxed environment for the child to grow in". (sic)

It is evident that the American television programs need to be revised. There is no place for crime dramas in the television schedule of the future if television is to become a promoting force in the advancement of American culture.

This is an abstract from an article published in
An Abstract from an article published in

TELEVISION: A challenge to the Family and Personality.

American social psychologists have studied the effects of television upon the social structure of the family and upon the development of the personality of an individual.

A series of recent studies are now available. Examples are the McDonagh study, the Brunswick Project of the Cunningham and Walsh Agency, and the McCoby study which are systematical and comparative in nature. The findings show that television as a mass medium is detrimental to the American way of life.

Nearly all television sets are in the use (sic) during the evening hours. The average hours of viewing range from 2½ hours per weekday evening for children to four hours for men. There is no indication that the viewing of television decreases with the length of ownership.

Since the average Americans purchase of a television set (sic), sixty-five percent of the sample families disclosed that they now visit friends and relatives less often than they used to. The frequency of motion picture attendance by owners of sets is thirty percent below what it was before they acquired a set. Furthermore, television ownership decreased overt participation in sport activities. Two-thirds of the sample families stated that since the purchase of their set, they are reading less.

Inspection of these data shows, that television means that more time is spent with members of one's family. However, the interactions of family members are important. Interaction alone promotes a close relationship between people. But we know that a large proportion of the families keep their sets in the living room. In general it is to be expected that if one person watches television, the other members of the family who are in the same room are not engaged in other activities. "The television family during the evening hours is changing from a social group characterized by conversation to an audience...". The amount of time family members spend together in talking to each other and in active participation in group life is significantly reduced. The basic social unit is in a far more dangerous position than ever before.
The psychological implications of television, particularly upon children, are even more important. Seventy-five per cent of all children usually separate and go to their homes instead of watching television together. They spend less time in group activities with their playmates. Children who have television spend twice as much time viewing television as they formerly spent reading comics, listening to radio stories and watching motion pictures combined.

Consequently the increase in exposure to mass media cuts short the creative playtime of children. Playing dolls, building with blocks, "helping" in the kitchen, working on hobbies, etc., are playtime activities which involve active participation by the child. Television seems to have a significant influence upon personality formation. It stimulates in the individual an escape tendency and impedes the development of social responsibility.

The already noticed disorganization of the social life of the American family has its complement in the process of disintegration of the individual. There is no doubt that these facts indicate that television produces a challenge to the American social structure.

This is an abstract from an article published in
Opinion Questionnaire

1. Very often adults and children view detective stories and Western movies on television.
   a) This often causes the individual to become overly emotional and leads to an increase in crime.
   b) This significantly improves the individual's emotional stability and therefore enables a person to handle his every day problems with more courage and success.
   c) This effects (sic) personality development in neither a favorable nor unfavorable manner.

2. Television effects (sic) the individual person
   a) in a favorable way by allowing vicarious satisfaction of otherwise unsatisfied needs.
   b) partially favorably and partially negatively so that no general statement can be made.
   c) in an unfavorable manner by causing the individual to be overly dependent upon outside sources for entertainment.

3. Watching television shows stimulate individuals
   a) to anticipate the sequence of happenings in the television story: a positive, active mental participation which is desirable.
   b) to no particular intellectual activity of any importance for the development of the person.
   c) to do nothing but relax, that is to exclude any creative mental activity thus slowing down the development of the individual.
4. Television crime dramas viewed by children result:
   a) in many cases in serious emotional disturbances which handicap them in their adjustment and development.
   b) in an improvement of their adjustment to their own emotional and social problems.
   c) in no effect upon the child as a whole but are attractive "playtime" entertainments.

5. The effect of television upon family life is characterized by the statement:
   a) Television is definitely detrimental toward the existence of family solidarity.
   b) Television increases family solidarity.
   c) Television does not effect (sic) family solidarity.

6. Current television programming
   a) is determined by people's interests and wishes. The function of television is to entertain people and thus current programming represents people's desires.
   b) is not in agreement with people's wishes because it over emphasizes entertainment by showing large numbers of detective stories and dramas of violence and this is not in the interest of our cultural development.
   c) includes too many educational type films which cuts short the broadcasting time for entertainment shows. People want to be entertained and are forced to look at travalogues and pictures of industries.

7. Since the purchase of a television set, family members spend more time together; this
   a) indicates that television produces an improvement in the active family life.
b) since family life depends upon active contacts and since people's interests are absorbed by the television, means that family life is detrimentally affected.

c) is unimportant as an indication of the goodness of family life.

8. The innovation of television in our culture

a) is a challenge to the American way of life because the effects of television are detrimental to both the social life of the family and to the individual.

b) is a promoting factor for the American way of life and therefore for the American culture thus improving both the social unity of the family and the security of the individual.

c) has neither disorganizational nor improving effects for the American way of life and culture.
Information Test.    Seat Number __________

(These questions were answered in the articles that you read in class)

The average child watches television an average of

- a) approximately two and a half or less hours per evening.
- b) three and a half hours per week.
- c) approximately four and a half or more hours per evening.

The purchase of a television set results in a reduction in the number of hours spent reading in

- a) approximately one-third of all families.
- b) very few families.
- c) in about two-thirds of all families.

Most scientists and educators feel that television crime shows

- a) increase the violent mood of our environment and, particularly for children, results (sic) in general disturbances like sleeplessness, etc.
- b) take up only a small proportion of the programs and as such are only one besides numerous other types of entertainment with partially negative and partially positive effects.
- c) reduce the tenseness of our daily environment and offer a chance for individuals to get rid of their own tensions.

In Los Angeles, one of the major cities of television, all television stations combined broadcast

- a) an average of about six hundred crime dramas per week.
- b) an average of about four hundred crimes per week.
- c) an average of about eight hundred crimes per week.

Men who have television sets view television programs on an average

- a) three and a half or less hours per weekday.
- b) approximately four hours during the weekday.
- c) four and a half or more hours per weekday.
Interviews of television ownership indicate that

- a) time spent viewing television remains constant regardless of the length of set ownership.
- b) viewing television increases with the length of set ownership.
- c) watching television markedly decreases with the length of set ownership.

Children whose homes are equipped with television sets

- a) spend as much time in creative play activities as do other children.
- b) spend less time in creative play activities because they spend twice as much time observing television as they formerly spent listening to radio and reading comics combined.
- c) have practically no time for creative play activities because they spend three times as much time viewing television as they did listening to the radio, reading comics, etc. combined.

Most psychologists and law-enforcement officers feel that the recent increase in crime

- a) is due to tensions and cultural changes produced by recent wars.
- b) is not real. They feel that since the war we have become more conscious of social problems than ever before.
- c) is due to the presence of too many crime programs on television.

Children's television programs are stories of violence

- a) twenty per cent or less of the time.
- b) approximately thirty per cent of the time.
- c) forty per cent or more of the time.

A number of recent publications maintain that as the result of television viewing

- a) the family has become less of a social unit than formerly because viewing television cuts short the time for interactions between group members.
- b) the viewers participate in active group life that is, they have more group discussions than they would if television did not exist.
- c) there is no particular change in the usual group activity of the family.
The heads of the police departments in television major cities have the opinion that

___ a) television shows educate children and adults to recognize methods and techniques used by criminals and therefore provide a help for the police.

___ b) television crime dramas make children more tolerant of criminals and less respectful of the police as the organ of law and order.

___ c) television crime dramas are but exciting phantasy stories with no noticeable effect.

Where was the article entitled "Television: A Challenge to the Family and Personality" originally published?

answer: "...

Where was the article entitled "The Television Crime Show" originally published?

"..."
If you were to read an article in each of the sources listed below which source would you be most likely to trust; write in the space before your choice, 1; second most likely to trust, write 2, etc.; until you have ranked all eight magazines.

Saturday Evening Post
Life Magazine
Social Psychological Reports of the American Psychological Association
Collier's
True Human Experiences
New York Times
Fortune
Pravda

Do you have more confidence in the reports of the experiences told by friends and well-known writers than in reports of experiments by social scientists? What is the basis of your opinion? Do you feel that the average college student would agree with you?

(Answer these questions with few but clear statements.)