The Role of Source Confusions in Television’s Cultivation of Social Reality Judgments

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The chief hypothesis of this study was that errors in memory (specifically source confusions) contribute to the link between television viewing and social reality judgments. Fiction-to-news confusions (fictional programming remembered as news) were hypothesized to positively predict TV-biased judgments of reality. News-to-fiction confusions (news remembered as fiction) were hypothesized to negatively predict such judgments. The results of an experiment in which subjects watched television programming containing both news and fiction indicated that these hypotheses were supported. Levels of confusion interacted with daily television viewing and with the level of certainty attached to the confusions. A manipulation of the visual similarity of the news and fiction content affected subjects’ tendency to make source confusions.

The argument that television viewers gradually come to adopt television’s distorted version of reality has received so much attention and has been the source of so much controversy that it seems foolhardy to write yet another article on the topic. Nonetheless, the purpose of this article is to take up the question of why television viewers would hold TV-biased beliefs in the presence of conflicting information from their own lives. The premise of the explanation offered here is that errors in memory play a key role.

The initial account of cultivation did not attempt to explain how such effects would occur. (For an overview of this account, see Gerbner, Gross, Morgan, & Signorile, 1986.) Rather, Gerbner and his associates docu-

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mented the distortions present on television and showed that heavy television viewers were more likely than light viewers to describe the world as mean, dangerous, and populated by the groups of people most represented on television (the cultivation effect). As is well known, this work has been hotly debated on a number of grounds, including the lack of explanatory mechanisms. (For a review, see Hawkins & Pingree, 1982.) Since then, there have been several attempts to describe how such effects might occur.

As Shrum and O’Guinn (1993) have pointed out, most psychological investigations of cultivation have focused on the processes of learning and construction. That is, researchers have envisioned viewers who learn (erroneous) information from television and then use that information to make judgments about the real world (Hawkins, Pingree, & Adler, 1987; Potter, 1991). Viewers who are better at acquiring information from television should show a stronger link between levels of viewing and judgments about the real world (Pingree, 1983). Viewers who place more trust in the realism and utility of television content should show stronger links between viewing and social reality judgments (Potter, 1991).

There is little empirical support for this model. In fact, the results have consistently run counter to the hypotheses. Subjects’ perceptions of the world of television were negatively (rather than positively) related to perceptions of the real world (Hawkins et al., 1987). Viewers who had less (rather than more) trust in the realism and utility of television content were most affected by viewing (Potter, 1991).

Shrum and O’Guinn (1993) suggested an alternative to the learning and construction model. They argued that television affects social reality judgments by providing highly salient, readily accessible instances that are then used heuristically. Because television depicts social reality, heavy viewers are more likely to have social reality information accessible than light viewers. Ready accessibility of an example leads to higher estimates of real-world frequencies (the availability heuristic), hence the correlation between viewing and social reality estimates.

Shrum and O’Guinn asked 130 female undergraduates to make five social reality estimates (e.g., prevalence of cocaine addiction, chances of being involved in crime). They found that heavy viewers made estimates more quickly than light viewers, which was consistent with the argument that relevant information was more accessible for the heavy viewers. They also found that qucker estimates were higher estimates (consistent with the availability heuristic). Thus the correlation between levels of viewing and social reality estimates could be accounted for by the speed of retrieving relevant information.

Shrum and O’Guinn argue that these results support a model in which individuals pay little attention to the type or accuracy of the information they use in making social reality judgments—accessibility is the determin-
ing factor in these judgments. “Source information is seldom consulted, even if it is available” (Shrum & O’Guinn, 1993, p. 461).

In contrast, Shapiro (1991) hypothesized that when people make a social reality judgment, they call up lots of event memories and then “weigh and balance” the memories based on the source. Event memories from low-credibility sources should have less influence on social reality judgments. The distribution of event memories among high-and low-credibility sources should help explain individuals’ social reality judgments.

Shapiro asked journalism students to complete social reality measures (e.g., judgments of frequency of crime) and then list anything they could remember relevant to the judgments they had just made. For each memory, they were to give the source (e.g., direct experience, mass media, other people). Shapiro found very limited support for his hypotheses. Source information did account for some of the variance in social reality judgments but not in the expected direction. The more examples individuals could list from each source, the lower their social reality estimates, regardless of whether the source was personal experience, television, or books. It is difficult to assess whether these results reflect problems with the population studied, measurement of source, or some real effect (see Shrum & O’Guinn’s [1993] comments).

Shapiro and Lang (1991) went on to suggest that individuals may make mistakes when remembering the source of information. Television’s effects on social reality might be the result of individuals mistakenly remembering that something depicted on television was actually experienced. They did not test this hypothesis.

Thus far, then, Shrum and O’Guinn are the only researchers to meet with empirical support for their hypotheses about the cultivation process. Moreover, source memory is an unlikely participant in this process. However, it may be possible to retain Shrum and O’Guinn’s approach without completely banishing source information. Here is a scenario. Individuals making a social reality judgment grasp at the first example that comes to mind. If that example is thought to come from a reliable source, then the individual uses the example to make the judgment. Because the trustworthy example was found so quickly, estimates are inflated. If the example is thought to come from an unreliable source, then it is discarded, and the individual searches for one that is more relevant. Because it takes longer to find a trustworthy example, the estimates are deflated.

What if individuals make mistakes about the source of their information? Individuals who tend to misremember events as coming from reliable sources will be more likely to label remembered examples as accurate and hence will be quicker to retrieve a seemingly trustworthy example relevant to the social reality judgment. Individuals who tend to misremember events as coming from an unreliable source will be more likely

to label examples as unusable and will take longer to find relevant instances.

What evidence exists for this scenario? In the present study, participants watched news and fictional television programming and were then asked to recall whether specific events had been part of the news or part of the fictional programming. This provides measures of fiction-to-news confusions (mislabeling fiction as news) and news-to-fiction confusions (mislabeling news as fiction). Participants also made social reality judgments and answered questions about their television viewing habits. Two hypotheses were made:

H1: Source confusions in which fictional television content is remembered as news will be positively correlated with measures of social reality beliefs.
H2: Source confusions in which news content is remembered as fiction will be negatively correlated with measures of social reality beliefs.

The effect of viewing television on social reality beliefs may depend on the level and type of source confusion habitually made by the viewer. Fiction-to-news confusions should intensify the effects of viewing, such that heavy viewers who make fiction-to-news confusions will be the quickest to find a seemingly useful example and will make the highest social reality estimates. On the other hand, news-to-fiction confusions will minimize the effects of viewing, such that even if heavy viewers can quickly think of an example, they will be likely to reject it as untrustworthy. Thus,

H3: The relationship between viewing and beliefs will be weaker among subjects who make few fiction-to-news confusions than among subjects who make more fiction-to-news confusions.
H4: The relationship between viewing and beliefs will be stronger among subjects who make few news-to-fiction confusions than among subjects who make more confusions.

One factor that should modify the relationships between source confusions and social reality estimates is the degree of certainty associated with the source attribution. Individuals who are more sure of their attribution should be more sure of their judgment about whether to use the information. A person making fiction-to-news confusions with a great deal of certainty should be more likely to use that fictional information in making a social reality decision than someone who is less sure that it was news.

In general, certainty should intensify the effects of source confusion.

H5: The positive relationship between the number of fiction-to-news confusions and beliefs will be stronger among those with high levels of certainty than among those with low levels of certainty.
H6: The negative relationship between the number of news-to-fiction confusions and beliefs will be stronger among those with high levels of certainty than among those with low levels of certainty.

Readers will note that these hypotheses are not direct tests of the scenario given earlier because there are no measures of the information participants use to make their social reality judgments and no measures of whether source is considered and unreliable sources are discarded. The assumption is that the source confusions measured in this experimental situation reflect individuals’ propensities in judging remembered information, and these propensities affect the ways in which television content is used. If this is not the case, television viewing should not interact with source confusions to predict beliefs.

Fortunately, some of the links in this chain of reasoning were tested by Strange (1993). Strange had participants read factual and fictional accounts of the creation of the Panama Canal. They then rated the truth of statements about the canal’s creation and indicated where they had read each statement. Strange found that participants made errors in remembering whether specific pieces of information were from the factual or fictional content. He also found that participants gave higher ratings of trustworthiness to material they mistakenly thought was factual than to material they thought was fictional. This supports the argument that perceptions of the source affect judgments about the validity of information. Further, errors in source memory affect people’s accuracy in deciding what information is valid.

None of this is to argue that people always consider source, or that source confusion is the only mechanism behind the cultivation process. Strange (1993) also noted that participants sometimes gave high ratings of validity to content that they knew was fictional. Some subjects appeared not to think about the source while rating the validity of a statement; others seemed to think that the fictional content was valid. It seems likely that more than one process is at work when individuals make judgments.

Predicting Source Confusion

If source confusions affect judgments of reality, it is important to understand the conditions under which these confusions are most likely to occur.

This study went only a small way toward investigating potential predictors of source confusion. Three variables were considered: age of the subject; whether the news and fiction programming shown to subjects in the experiment was visually similar or visually distinct; and time—whether a week’s delay in testing affected subjects’ tendency to make source confusions.

Age. Three age groups were contrasted—young children, adolescents, and elderly adults—but these comparisons form the basis of a separate paper. Put briefly, prior developmental research has indicated that there are age differences in the tendency to make source confusions, and one goal of the project was to explore whether elderly adults are particularly likely to form TV-biased judgments as a result of watching television. The results discussed in the present study are based on the adolescent and elderly adult sample.

Visual attributes of news. It is possible that visual similarity between news and fiction content could contribute to source confusion. In the present study, this was investigated by creating a condition in which the news and fiction content was visually similar and a condition in which it was visually distinct. In the distinct condition, the news story contained footage that is typically associated with news rather than fiction—maps, talking heads, people being interviewed. When the viewer then tried to remember the news story and the trailer, the different context cues (visual footage) should have reduced confusion between the two.

The hypothesis was:

H7: Levels of source confusion will be lower in the visually distinct condition than in the visually similar condition.

Changes in source confusion over time. Researchers looking for the sleeper effect have provided evidence that memory for source of information grows worse over time (see Allen & Stiff, 1989). What is more controversial is whether there is, in fact, a sleeper effect whereby messages from low-credibility sources eventually become even more powerful than messages from high-credibility sources as source information is forgotten (Hovland, Lumsdaine, & Sheffield, 1949). Allen and Stiff (1989) conducted a meta-analysis of 20 studies of the sleeper effect and concluded that the best model of the sleeper effect was one in which information about the source of a message becomes dissociated from the message over time, so that only the information within the message is used. These findings suggest two things. First, as time passes, individuals will be less able to remember whether a piece of information was in news or fictional programming. Second, as individuals forget that a piece of information was fictional, they will be more likely to use it and be affected by it in making judgments.

To test the effects of time, half the subjects in the present study were tested immediately after they viewed the stimulus tapes, and half were tested a week later. The hypothesis was:
H8: Source confusions will be higher among subjects tested a week after viewing the stimulus tapes than among subjects tested immediately.

In summary, the goal of this project was to see whether errors in memory (source confusions) observed in an experimental context would predict individuals' views about reality.

METHOD

Subjects

Three age groups were examined in this study: students in the 2nd grade and 12th grade and elderly adults. However, as mentioned before, age differences are discussed elsewhere, and the results reported in this article are based on the adolescent and elderly samples.

The elderly sample (n = 80) was recruited from senior citizen centers and church groups. The age range was 66 to 78 (male median = 70; female median = 71). The 12th-grade students (n = 80) were aged 17 and 18. Within each age group, half the subjects were male, half were female. Written consent was obtained from the subjects or from the parents (for those aged 18 or younger).

Design

This study employed a 3 × 2 × 2 × 2 between-subjects design. The first factor was age of the subjects (discussed elsewhere). The second factor involved visual manipulation of the stimuli. The target news story and movie trailer were either visually similar or visually distinct (see the "Materials" section for a description). The third factor was the time of testing (immediate vs. a week later). The fourth factor was the order in which subjects saw the movie trailer and the news story (trailer first vs. news story first).

Procedure

Testing sessions. Subjects in the immediate testing condition participated in one 40-minute session, during which they filled out a questionnaire on viewing habits, watched the tape, and answered questions about the content. Subjects assigned to the delayed condition attended two 20-minute sessions. In the first session, they completed the questionnaire and viewed the tape. A week later they answered questions about the tape. The 12th-grade students were tested at their schools; the elderly adults were tested at senior citizen centers. All subjects were tested individually. The researcher read out the questions and wrote down subjects' responses.

Materials

Stimulus tapes

To increase external validity, the target news story and trailer were embedded in other programming (total length of the tape was 20 minutes). The target news story was one of four news stories shown, and the trailer was one of three ads shown between the news stories. The news stories were part of an ABC nightly news program aired in 1987, selected because they did not appear dated and were unconnected to current news events occurring at the time of the study. The three distraction news stories were about new techniques to help autistic children, an arms dealer being captured, and political struggles in South Africa. As in the original broadcast, the target news story was embedded between the arms dealer story and the story about South Africa. The autism story was separated from the other three by a set of ads, one of which was the movie trailer.

The target story was about ongoing border disputes between Libya and Chad. In the visually similar condition, subjects saw the original version of the news story that contained action footage (e.g., an air base being bombed). The visually distinct version was created by replacing most of the original footage with maps of the area, shots of what appeared to be Chaddians being interviewed by a white reporter, a shot of the reporter waiting to speak while Peter Jennings introduced the story, and shots of villagers standing still and looking at the camera. The verbal content of the story was the same in both conditions.

The movie trailer was created from an obscure movie called The Human Shield about a U.S. marine embroiled in political struggles in the Middle East. The format for the trailer was based on other currently available trailers: Narration was combined with segments of dialogue, sound effects, and music from the original film.

Pretesting the stimulus tapes. Forty-seven college undergraduates enrolled in an introductory communication arts course were randomly assigned to watch the visually distinct or visually similar version. They then answered a series of questions about the content. The results suggested that the manipulation was successful: Those in the visually distinct condition rated the trailer and the news as significantly less visually similar than those in the visually similar condition, F(1, 46) = 61.43, p <.01. In addition, subjects in both conditions thought the news story and the movie trailer were typical of other news stories and trailers. (Average
rating of "typicality" for the news was 6.15 out of 7; average rating for the trailer was 5.53.)

Measures

Viewing habits. Subjects reported how often they watched local and national news and read newspapers and newsmagazines. They also indicated how often they watched specific genres on television. The measure of viewing used in analyses in this article asked subjects how many hours they spent watching television "before noon," "between noon and 6 p.m.," "between 6 p.m. and 10 p.m.," and "after 10 p.m." This technique was developed for an earlier study with elderly adults (Mares & Cantor, 1992), where subjects found it easier to generate estimates for day parts than to come up with one global estimate. The average number of hours watched per day was 3.1 (SD = 1.4, range = 6).

Income. Prior research (e.g., Doob & Macdonald, 1979) has indicated that financial status (specifically the type of neighborhood in which one lives) is an important predictor of social reality beliefs. The experimenter read out a list of income ranges and asked subjects to indicate the appropriate range for their household.

Source confusions. A list of 24 specific events was created. Eight of these events came from the target news story, 8 were from the movie trailer, and 8 had not been in either. Subjects chose whether the event had been in the news, the trailer, both the news and the trailer, neither the news nor the trailer, or "don't know." Scores were created for fiction-to-news confusions and for news-to-fiction confusions. These two measures were not wholly independent (someone who made 22 fiction-to-news confusions could only make 2 news-to-fiction confusions). However, there seemed to be enough items to mitigate this problem. The range of fiction-to-news confusions was 6; the range of news-to-fiction confusions was 5. Thus individuals could have potentially have had high scores on both types of confusions.

Confidence about source attributions. After each source attribution was made, subjects were asked to use a 4-point scale to indicate their certainty.

Socioeconomic measures. To make comparisons with previous studies of cultivation, the scales used were taken from those previous studies with only minor modifications.

Estimates of violence. The Perceptions of Violence Scale was taken from Hawkins et al. (1987). Subjects were asked about the prevalence and nature of violence and were given two possible responses for each question. One response reflected real-world statistics; the other was the "television world" answer. Reliability for this scale was .72 using Cronbach's alpha.

Mean world beliefs. The Mean World Beliefs Scale was taken from Hawkins et al. (1987), who modified the original Mean-Spirited World Scale developed by Gerbner and Gross (1976). The scale contains items about how helpful or trustworthy most people are, as well as items about personal vulnerability. The range of possible responses was expanded from "agree or disagree" to a 5-point scale. Reliability, using Cronbach's alpha, was .78.

RESULTS

Predicting Social Reality Judgments

The first two hypotheses stated that there would be a link between subjects' source confusions and their social reality judgments. Six regression analyses were conducted (news-to-fiction confusions predicting three social reality measures, fiction-to-news confusions predicting three measures). In each case, subjects' income and the number of hours spent viewing television on an average weekday were entered on the first step (income and media use have been the traditional predictors of social reality judgments). The number of news-to-fiction or fiction-to-news confusions was added in a subsequent step to see whether it explained additional variance. The results of these analyses are summarized in Tables 1 and 2.
As Table 1 indicates, income was a significant negative predictor of estimates of violence. Subjects with higher incomes reported that society was less dangerous, compared to subjects with lower incomes. Income did not predict mean world scores and socioeconomic status (SES) estimates.

The amount of daily television viewing was a significant positive predictor of mean world scores and SES estimates but not of violence. Subjects who watched more television perceived the world to be more mean and gave higher estimates of the numbers of professionals in society. These are the classic cultivation findings.4

Fiction-to-news confusions and social reality measures. It was hypothesized that levels of fiction-to-news confusions would positively predict the measures of TV-biased social reality perceptions. As can be seen from Table 1, this hypothesis was strongly supported. Those subjects who remembered more events depicted in the movie trailer as having been part of the news had higher scores on all three measures. Even after income and daily viewing were entered on the first step, fiction-to-news confusions explained between 22% and 33% of the variance in social reality measures.

**Table 1**

<table>
<thead>
<tr>
<th>Dependent Variable Predictor</th>
<th>Beta</th>
<th>F</th>
<th>R² Change</th>
<th>Adjusted R² Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violence estimates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>-0.20</td>
<td>8.91**</td>
<td>.09***</td>
<td></td>
</tr>
<tr>
<td>TV hours</td>
<td>0.11</td>
<td>2.58</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiction-news</td>
<td>0.47</td>
<td>49.95***</td>
<td>.22***</td>
<td></td>
</tr>
<tr>
<td>Mean world scores</td>
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<td></td>
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</tr>
<tr>
<td>Step 1</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
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<td>0.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TV hours</td>
<td>0.13</td>
<td>4.29*</td>
<td>.04*</td>
<td></td>
</tr>
<tr>
<td>Fiction-news</td>
<td>0.55</td>
<td>73.07***</td>
<td>.31***</td>
<td></td>
</tr>
<tr>
<td>SES estimates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 1</td>
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</tr>
<tr>
<td>Income</td>
<td>-0.04</td>
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<tr>
<td>TV hours</td>
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<td>7.44**</td>
<td>.06**</td>
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<tr>
<td>Fiction-news</td>
<td>0.52</td>
<td>60.75***</td>
<td>.26***</td>
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</table>

*p < .05, **p < .01, ***p < .001.

NOTE: Betas, Fs, and their associated significance are reported from the final stage of each analysis.

**Table 2**

<table>
<thead>
<tr>
<th>Dependent Variable Predictor</th>
<th>Beta</th>
<th>F</th>
<th>R² Change</th>
<th>Adjusted R² Cumulative</th>
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</thead>
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<tr>
<td>Violence estimates</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>-0.24</td>
<td>10.24**</td>
<td>3.81*</td>
<td></td>
</tr>
<tr>
<td>TV hours</td>
<td>0.13</td>
<td>3.81*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiction-news</td>
<td>-0.17</td>
<td>4.87*</td>
<td>.03*</td>
<td>.10</td>
</tr>
<tr>
<td>Mean world scores</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Income</td>
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<td>0.88</td>
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<td></td>
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<tr>
<td>TV hours</td>
<td>0.00</td>
<td>5.27*</td>
<td>.04*</td>
<td></td>
</tr>
<tr>
<td>Fiction-news</td>
<td>-0.17</td>
<td>4.65*</td>
<td>.03*</td>
<td>.05</td>
</tr>
<tr>
<td>SES estimates</td>
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</tr>
<tr>
<td>Step 1</td>
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<td></td>
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<td>.06**</td>
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<td>Fiction-news</td>
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<td>2.61</td>
<td>.02</td>
<td>.06</td>
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</table>

*p < .10, **p < .05, ***p < .01, ****p < .001.

NOTE: Betas, Fs, and their associated significance are reported from the final stage of each analysis.

**News-to-fiction confusions and social reality measures.** Hypothesis 2 was that levels of news-to-fiction confusions would negatively predict TV-biased social reality scores. As Table 2 shows, this hypothesis was partially supported. Remembering events shown in the news as having been part of the fictional trailer was significantly associated with lower violence estimates and mean world scores. This association was not significant for SES estimates, although the direction of the beta is consistent with the other two measures. Overall, the effect sizes were considerably smaller than for fiction-to-news confusions—3% of the variance explained.

**Interactions between source confusion and TV viewing.** Hypothesis 3 was that there would be an interaction between television viewing and fiction-to-news confusions in predicting social reality beliefs. The correlations between viewing and beliefs were expected to be higher among those making high levels of fiction-to-news confusions than among those who made few such confusions.

These interactions were tested by three regression analyses (one for each dependent variable) in which income was entered on the first step.
### TABLE 3
Zero-Order Correlations Between Daily Television Viewing and Social Reality Beliefs at Different Levels of Source Confusion

<table>
<thead>
<tr>
<th>Confusions</th>
<th>Fiction-to-News</th>
<th>News-to-Fiction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Daily TV with</td>
<td>.94</td>
<td>.26</td>
</tr>
<tr>
<td>Violence estimates</td>
<td>.06</td>
<td>.32</td>
</tr>
<tr>
<td>Mean world scores</td>
<td>.16</td>
<td>.37</td>
</tr>
<tr>
<td>SES estimates</td>
<td>(n = 88)</td>
<td>(n = 72)</td>
</tr>
</tbody>
</table>

Daily television viewing and number of confusions were entered on the second step, and the product term was entered on the third step. The results indicated the predicted significant interaction for violence estimates, $F(1, 155) = 9.84, p < .01; R^2$ change = .03; mean world scores, $F(1, 155) = 5.29, p < .05; R^2$ change = .02; and SES estimates, $F(1, 155) = 4.69, p < .05; R^2$ change = .02. Table 3 shows the correlations between viewing and each of the three social reality measures for high and low levels of fiction-to-news confusion (using a median split to divide confusions).

Hypothesis 4 was that news-to-fiction confusions would show the opposite effect on the relationship between viewing and beliefs—the correlation would be stronger among those making low levels of confusion. The interaction terms were not significant for any of the three dependent measures ($p$-values ranged between .20 and .45). However, as Table 3 shows, the pattern of correlations was in the expected direction.

The effect of certainty of attributions. It was hypothesized (H5 and H6) that the degree of certainty with which subjects made source attributions would intensify the effects of the different source confusions. Six regression analyses were conducted (two types of confusion, three social reality measures). Income and daily television viewing were entered on the first step. The number of confusions (either fiction to news or news to fiction) was entered on the second step, together with certainty ratings. The product term (number of confusions multiplied by certainty ratings) was then entered on the third step of the regression.

Overall, there was support for the hypothesis. Being more certain of fiction-to-news confusions was associated with higher scores on all three social reality measures (see Figure 1). Conversely, being more certain of news-to-fiction confusions was associated with lower scores on the three social reality measures (see Figure 2).

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**Figure 1:** Interactions Between Number of Fiction-to-News Confusions and Degree of Certainty Predicting Social Reality Beliefs

Note: High and low refer to scores approximately one standard deviation above and below the mean.
For the regression analyses using fiction-to-news confusions, the statistics associated with the interactions are as follows. For violence estimates, \(F(1, 154) = 5.41, p < .05, R^2\) change = .01; for mean world scores, \(F(1, 155) = 10.502, p < .01, R^2\) change = .03; and for SES estimates, \(F(1, 155) = 17.33, p < .001, R^2\) change = .07.

For the regression analyses using news-to-fiction confusions, the statistics associated with the interactions were as follows. For violence estimates, \(F(1, 154) = 7.04, p < .01, R^2\) change = .04; for mean world scores, \(F(1, 155) = 10.92, p < .01, R^2\) change = .04; and for SES estimates, \(F(1, 154) = 10.06, p < .015, R^2\) change = .06.

Predicting Source Confusion

The final set of hypotheses focused on predictors of source confusion.

**Effects of the visual manipulation.** It was hypothesized (H7) that the number of confusions (i.e., both news-to-fiction and fiction-to-news) would be lower in the visually distinct condition than in the visually similar condition. This hypothesis was supported. There was a main effect of visual distinctiveness, \(F(1, 228) = 71.93; p < .001\). The mean number of source confusions for the visually distinct condition was 2.76; the mean for the visually similar condition was 4.2.

**Effects of the time of measurement.** Hypothesis 8 was that source confusion would be higher a week after subjects saw the stimulus tapes than immediately after viewing. To test the effect of time, a repeated measures analysis of variance was conducted in which type of source confusion (news-to-fiction; fiction-to-news) was the repeated measure.

The results indicated a significant main effect of immediate versus delayed testing, \(F(1, 155) = 45.12, p < .001\); immediate mean = 3.06; delayed mean = 3.91. There was no interaction between time of testing and the type of source confusion—both types of source confusion were more frequent a week later, and there was no significant difference between the two types in the amount of increase over time.

There was a significant interaction between time of testing and visual manipulation, \(F(1, 155) = 15.18, p < .001\). The difference in the number of source confusions between the two visual conditions was smaller for those subjects who were tested a week later than for those who were tested immediately. Among subjects who were tested immediately, those in the visually similar conditions made an average of 4.03 confusions; those in the visually distinct condition made an average of 2.10. Among those who were tested a week after exposure to the stimulus tape, those who saw the
similar versions made an average of 4.38 confusions; those who saw the distinct versions made an average of 3.41 confusions. Despite the reduction in the effect of the manipulation, the visual conditions were still significantly different a week later.

DISCUSSION

The results of this study support the argument that source confusions play a role in the effects of television viewing on social reality beliefs. That is, when individuals misremember whether items depicted on television really occurred, their beliefs about the real world may be affected, either in the direction of television’s biased version of reality or away from that version. The direction of effects of television viewing appears to depend, in part, on the type of source confusions made by viewers.

The skeptic may argue that the correlations between confusions and social reality beliefs do not provide evidence for the causal sequence suggested here. Maybe source confusion merely reflects some general underlying deficit that itself produces distorted perceptions. Maybe people who make these types of errors are prone to exaggerate or have poor judgment. There are two responses available.

First, the direction and level of source confusion not only explained why some people had more TV-biased social reality scores; they also explained why some people had less TV-biased perceptions. Moreover, the certainty attached to these specific judgments strengthened the predictive power of both effects. The ability to predict both types of outcomes makes it less plausible (though not impossible) that source confusion itself is not the relevant mechanism and that some more general process is responsible.

Second, as hypothesized, source confusion interacted with the amount of television viewing. The relationship between viewing and beliefs was strongest among people who made high levels of fiction-to-news confusions and people who made low levels of news-to-fiction confusions. If viewing affected social reality beliefs only by other means (i.e., not via source confusion), or if source confusion reflected a general tendency that only affected beliefs directly, we would not expect this interaction.

The results of this study (and of Strange’s [1993] study) run counter to Shrum and O’Guinn’s (1993) suggestion that individuals rarely, if ever, consider the source of their information when making judgments. However, Strange found evidence that other judgment processes were also at work, and he suggested that the perceived importance of the judgment may affect the amount of care people take and the extent to which they consciously consider source information. A relatively simple advance in methodology would be to ask subjects about the extent to which they usually care and think about the social reality issues they are judging (e.g., the risk of being a victim of violence or the percentage of the population who are doctors).

It is also worth noting that support of the hypotheses in this study could be consistent with either the “learning and construction” model or the “first available example” model. Indeed, the study was originally designed around the learning model. Using this model, the scenario would go as follows: Viewers who make fiction-to-news confusions accumulate examples they believe to be real. When making social reality judgments, they engage in a mental count and come up with a high estimate. Viewers who make news-to-fiction confusions find few examples they believe to be real and make low estimates.

The chief difference between the two approaches, according to Shrum and O’Guinn (1993), is the degree to which viewers are thought to be rational when making social reality judgments. The studies so far indicate that people show signs of rational behavior in an experimental situation. It is not certain whether they use the same procedures in everyday life and whether their social reality judgments in response to the experimenters’ questions reflect their everyday beliefs. So, rather than arguing that individuals are either rational or irrational, it seems likely, as the evidence now stands, that people fluctuate in the extent to which they bother to be rational. Further studies should investigate the basis for beliefs that are highly developed and resistant to change and compare them to the basis for beliefs that are more volatile.

Finally, this is more than an academic wrangle. Fiction-to-news confusions appeared to strengthen the cultivation effect. That is, these confusions (particularly in combination with heavy television viewing) were associated with beliefs that the world is dangerous and full of mean people. Clearly, if these judgments restrict adults’ activities or reduce the quality of their interactions with others, there is reason to be concerned.

There was evidence in this study that making news and fiction less visually similar reduced the level of confusion. One could also imagine trying to develop critical viewing instructions to alert viewers to the potential for confusion. However, I am not suggesting that one could overcome all negative effects of television by a simple visual manipulation, or that critical viewing training is a panacea. The issue of how groups are represented and how social structures are portrayed on television continues to be problematic and worthy of concern.
NOTES

1. Second-grade children are not included in this report in part because a number of the measures could not be used with them for ethical reasons and because results for this group differed from those of the other two groups.

2. The original story contained 5 seconds of footage showing dead soldiers. This was edited out of both conditions to meet ethical requirements that the children in the study not be exposed to upsetting material. In the visually similar condition, the potentially distressing footage was replaced with shots of an airplane flying overhead and of Chadian children playing in their village.

3. Subjects also estimated other items given in the Buerkel-Rothfuss scale, such as frequency with which men and women have affairs, get divorced, and so on. These items did not relate to socioeconomic estimates and were not used in the factor analysis.

4. Subjects’ reports of how often they viewed news, cop shows, prime-time drama programming, religious programming, and talk shows, as well as read newspapers and magazines, were included as predictors to examine the effects of specific genres on cultivation. However, none of these were consistent significant predictors so they were not included in the analyses reported here.

5. The correlation between the television viewing measure and the fiction-to-news confusions was .07 (p = .35) between viewing and news-to-fiction confusions .13 (p = .08).

6. Because of the problem of multicollinearity created by using the product term to test the interaction, mean-deviated scores were used as recommended by Cohen and Cohen (1983). The same procedure was used to test all interactions reported in this article.

7. For violence estimates and mean world scores, there were also significant main effects of certainty attached to fiction-to-news judgments: The more certain people were of their fiction-to-news judgments, the higher their scores on social reality measures. For violence estimates, F(1, 154) = 8.81, p < .01; Beta = .18. For mean world scores, F(1, 155) = 3.95, p < .05; Beta = .12. There was no main effect of certainty on SES estimates.

8. These interactions are illustrated using the procedure outlined by Cohen and Cohen (1983) and Aiken and West (1991)—plotting the slopes by substituting specific values for each of the two variables in the interaction into the regression equation. The same procedure was used for all interactions illustrated in this article.

REFERENCES


