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Mediating the Cultivation of Fear Through Media Literacy Education

College students ($N = 110$) received a media literacy intervention based on critical thinking or they received no intervention. Students were also classified as low or high television viewers based on responses to a Television Use Survey. Fear was measured with a Safety Survey and analyzed with a 2 Intervention x 2 Television Viewing ANOVA. Fear was expected to be lower in the intervention and low television viewing groups than in the no intervention and high television viewing groups. However, no results were significant.

By age 18, the average child in the United States will have witnessed 16,000 murders on television ("Media Literacy," 2006). Sixty-five percent of children have television sets in their bedrooms, and the average American seventh grader watches three hours of television a day ("Media Literacy," 2006). Electronic media has multiplied exponentially over the past century. From radios to personal digital assistants, electronic technologies have gone through many updates and advances. With the increased availability of technology has come all of the wonders of a global world, including the World Wide Web, email, and worldwide broadcasts of news and entertainment. But these advances have done much more than just change how people communicate. In some cases, they have changed how people think.

Considerable research has focused on violence in the media (e.g., Diefenbach & West, 2001; Gerbner & Gross, 1976; Gross & Aday, 2003). It is widely accepted that watching violent television can foster aggression, but what about other effects of television violence? Can television also foster a fear of victimization? In 1962, Gerbner began research with the National Commission on the Causes and Prevention of Violence into whether television content correlates with viewers' perceptions of reality (Gerbner & Gross, 1976). Gerbner and colleagues studied viewers' perceptions of reality by creating a Cultural Indicators Index in which groups of researchers watched primetime television and recorded occurrences of violence, social relationships, and other symbolic interactions between fictional characters.

Gerbner and his colleagues then distributed a survey asking peoples' opinions of these same interactions in the real world. Comparisons of participants' responses with the Cultural Indicators Index allowed researchers to empirically study whether participants' estimations of violence were affected by the amount of television they watched—that is, whether they gave the “television answer” or the “alternative answer,” which was slanted more towards reality” (Gerbner & Gross, 1976, p. 191).

The results of Gerbner and Gross's 1976 study supported the hypothesis that the more television people watch, the more they use their experiences with television rather than their experiences in the real world when making estimations about the amount of violence in the real world. For example, when heavy television viewers (4 or more hours per day) were asked, “During any given week, what are your chances of being involved in some type of violence?” they tended to answer 1 in 10, the typical amount seen on television, instead of 1 in a 100, a typical real world answer (Gerbner & Gross, 1976). Gerbner called this a cultivation effect, meaning that television cultivates a reality that is more extreme than the world that people actually live in, whether it be more violent, humorous, or dramatic. Gerbner's research has been replicated at his home institution, the University of Pennsylvania, with similar results to his initial study (Gerbner, Gross, Morgan, & Signorielli, 1994).

A study conducted in New York City (Shrum & Bischak, 2000) indicated that participants who watched comparatively more television overestimated personal risk and crime, thereby supporting Gerbner's hypothesis. Morgan (1983) found that the more closely people are related demographically to the television characters they are watching, the more they believe that any violence happening to the character could happen to them. Researchers in North Carolina conducted a content analysis and found that violent crime was overrepresented and property crime was underrepresented on network prime-

time television (Diefenbach & West, 2001). The data were subsequently used to predict peoples' crime estimates in their communities.

Researchers found that heavy television viewers were more likely to overestimate murders in their community and to underestimate burglaries, thereby supporting the predictions based on the content analysis, and again supporting the cultivation hypothesis.

However, primetime television is but one source of violent media. Another source of media violence is television news, which has become the most widely used news source in the United States (Claussen, 2004). It seems that in a quick-paced society, convenience and passivity outweigh exactness and attention to detail. For example, Claussen (2004) found that even though people view newspapers as a better source of news, people still use television exponentially more than newspapers. Given the mantra of “whatever bleeds leads,” the cultivating effects of television news warrant further study. Results of a survey of 2,300 Philadelphia residents indicated that watching local television news increased fear and concern about crime, regardless of local crime rates (Romer, Jamieson, & Aday, 2003). A similar study in Washington D.C. did not find a cultivation effect, but it found that violence on the news had an agenda-setting effect, meaning that although people did not necessarily overestimate crime, they thought about crime more (Gross & Aday, 2003).

It is possible, however, that these results reflect another well-known concept, the availability heuristic. In 1973, Tversky and Kahneman conducted revolutionary research on how people use information to make judgments of subjective probability. Research on the availability heuristic supports the hypothesis that people use information they received most recently about a subject when making a subjective judgment about the likelihood of an event (Tversky & Kahneman, 1973). “Frequent events are easier to recall or imagine than infrequent ones” (Tversky & Kahneman, 1973, p. 209). Therefore, if people often witness stories

of violence on the news, it is likely that when asked to make judgments about violence, they will provide higher estimates because they are able to recall more examples of violence. For example, Shrum and O'Guinn (1993) found that participants who watched more television not only showed the effects of cultivation, but answered questions more quickly, which suggests that relevant information from television was more accessible in their memories than other experiences were.

Research has indicated that participants who watch more television not only respond with cultivated answers but also believe more strongly in their answers relative to participants who watch less television. Shrum (1999) found that heavy television viewers demonstrated stronger attitudes than light viewers, suggesting that "television may serve to bolster and reinforce attitudes consistent with the television message" (p. 3). Therefore, cultivated information not only is more readily available, as implicated by the availability heuristic, but is truly believed and defended.

Empirical content analyses of news systematically reveal that the news must be viewed as a constructed reality (Brookfield, 1986). Research supports, and producers would likely agree, that news rarely shows the whole story, not necessarily because producers try to skew perceptions but because of the constraints of time slots and the ranking of priorities (Brookfield, 1986). However, if the news is a constructed reality and people are passively absorbing it, how can the cultivation effect and fear of victimization be reduced?

Shrum (2001) found that when participants were asked to spontaneously (heuristically) estimate the prevalence of crime, occupations, affluence, and marital discord, cultivation effects occurred. However, when Shrum manipulated task importance/accuracy motivation and told participants to process their estimations systematically, the cultivation effects were mediated. Thus, if people take the time to think critically, cultivation effects do not occur. Critical thinking is the focus of media literacy

education, which aims to reduce the effects of media by empowering consumers with the knowledge and critical thinking skills to deconstruct potentially harmful media messages. For example, in one study, women who experienced a media literacy intervention were more resistant to media messages about body image than were women with no intervention (Irving & Berel, 2001). In another study, adolescents who were trained in media literacy techniques reduced their beliefs about their peers' use of tobacco (Austin, Pinkleton, Hust, & Cohen, 2005). In the study, adolescents learned advertising techniques and how the techniques are used to affect buying decisions.

Media literacy is "centered on the application of informed inquiry and critical thinking, driven by healthy skepticism rather than negative cynicism, and accompanied by deserved appreciation and support of all that is well and good in the mass media" (Galician, 2004, p. 145). The ultimate goal of media literacy education is to create viewers who are so well versed in critical thinking skills that when they watch television, they use critical thinking as cognitive shortcuts instead of using heuristics.

Recently, researchers and educators have emphasized the need for a formal media literacy program in the United States (Potter, 2004). Researchers have called for everything from a cognitive theory to explain how people watch and respond to television, to a complete "ideological detoxification," which means teaching people that simplistic explanations of a complex reality might not be sufficient (Brookfield, 1986, p. 151; Potter, 2004). Some experts believe that viewers lack knowledge about how to watch television and that their passive absorption of television has led the United States to lose its democratic roots (Berg, Wenner, & Gronbeck, 2004). However, experts also assert that by institutionalizing media literacy programs, America will enable "an informed and engaged citizenry" (Berg et al., 2004, p. 219). They argue that by developing stronger critical thinking skills, viewers will process media messages more carefully, much

like Shrum (1999) found in his research on processing strategies.

This study attempted to demonstrate that an intervention based on critical thinking reduces cultivation. Men and women (college students) participated in a media literacy intervention based on critical thinking or in no intervention. The intervention occurred after participants watched a video clip of a local news broadcast. The intervention consisted of five critical thinking questions based on the five fundamentals of media literacy, as outlined by media literacy expert Catherine Gourley (as cited in Lewis, 2005). The five fundamentals of media literacy are as follows:

- (a) media messages come in different formats, such as commercials or news articles or billboards, (b) all media messages are created by someone for a specific purpose and target a specific audience or audiences, (c) all media messages are constructions and the way they are constructed includes words, images, and sounds, (d) people interpret media messages differently, based on their own experiences and even prejudices, [and] (e) each media message represents someone's social reality. (p. 1)

After the intervention, students watched the news clip for a second time and completed a fear survey and television use survey. It was expected that the intervention group would have lower levels of fear than the no intervention group. It was also predicted that high television viewers would have higher levels of fear than would low television viewers.

Method

Participants

Participants were 110 undergraduate students (28 men and 82 women) from a small liberal arts undergraduate college in Southwestern PA. Participants were predominantly Caucasian, from the United States, and ranged in age from 18 to 26 ($M = 19.6$ years). Most of the participants (57.3%) were students in the School of Social

Sciences, Communication, and Education.

Participants were recruited from classes and some were offered extra credit for their participation. Participants were assigned to one of two groups: intervention ($n = 51$) or no intervention ($n = 59$).

Materials

A Panasonic Omnivision VCR and a 19 in. Sony Trinitron color television were used to show the first 5 min of a local news broadcast that had aired in the fall of 2006 in Southwestern PA. The video clip was recorded from the television onto a standard VHS cassette tape. The majority of the clip focused on a school shooting in an Amish community.

Participants in the intervention group received a copy of five critical thinking questions (see Table 1), which were derived from the five fundamentals of media literacy. The intervention group was directed to focus on the critical thinking questions whereas participants in the no intervention group were given no specific focus.

Participants completed an open-ended evaluation of the news clip, which consisted of a blank sheet of paper with the word "Evaluation" on the top. Participants also completed a Safety Survey in which they rated the likelihood that negative events (e.g., murder) would happen to them or to someone close to them in their lifetime. The survey consisted of 10 questions and participants recorded their answers on a scale ranging from 1 (*not likely*) to 5 (*very likely*). Scores could range from 10 to 50 with higher scores reflecting greater fear.

A Television Use Survey was used to obtain demographic information and television viewing habits. Specifically, participants indicated the number of hours of television they watch on each day of the week.

Procedure

During class students were invited to participate in a study that was ostensibly designed to assist an on-campus television production class. Students were told that the purpose of the research session was to collect

data for three projects in the production class. They were informed that the first part of the session required them to watch and evaluate a news clip. They were told that the second part entailed completing a survey to identify students' safety concerns, ostensibly for the future production of safety videos. Finally, they were told that the third part of the session required students to complete a television use survey, which would allow the production class to examine campus television viewing habits. Interested students signed up for an experimental session, and they received reminders about their session through campus mail and email.

When they arrived at the experimental session, students read and signed the informed consent form. Before viewing the news clip for the first time, students received a piece of paper for taking notes and were told, "Remember, I am going to need you to evaluate this broadcast eventually so please pay close attention." In addition, the intervention group was instructed to "pay attention to the content of what the news anchors are talking about." Then participants viewed the 5-min news clip.

After the clip ended, the intervention group received a copy of the five critical thinking questions. The first two questions were discussed with the group to direct students' thinking. The experimenter asked the first question and students offered their opinions. Every student who attempted to answer was given the chance, and if no student attempted to answer the experimenter guided the discussion with predetermined answers. After a 2-min discussion of the first question, the second question was asked and the same procedure was followed. After discussing the first two questions, the intervention group was instructed to focus on all of the critical thinking questions while they viewed the news clip a second time. The no intervention group was simply told, "You are now going to watch the clip again, just so you are familiar with the clip."

After the clip was viewed twice, participants in both groups completed the open-ended evaluation. Participants in the intervention group

were again reminded to focus on the five critical thinking questions while making their evaluation.

Next, students completed the Safety Survey, ostensibly for the production of safety videos, and the Television Use Survey, presumably for the production class to examine students' television use patterns. Then all surveys were collected and participants were debriefed about the study's true purpose and hypotheses.

Results

Students' reports of amount of television viewing per week ranged from 0 to 46 hrs. High and low television viewers were defined by a medium split, with high viewers watching 10 hr or more per week. Fear was defined as the sum of responses on the Safety Survey. Fear scores for the sample ranged from 13 to 47 ($M = 33.1$, $SD = 6.40$).

Table 2 shows mean fear score by television viewing and intervention condition. High television viewers scored slightly higher on fear ($M = 33.9$, $SD = 6.39$) than did low television viewers ($M = 32.3$, $SD = 6.34$). The intervention group scored slightly lower on fear ($M = 32.5$, $SD = 5.96$) than did the no intervention group ($M = 33.7$, $SD = 6.73$). A 2 Intervention \times 2 Television Viewing analysis of variance of fear scores revealed no effect of intervention ($F(1,106) = 1.66$, $p = .20$), television viewing ($F(1,106) = 2.33$, $p = .13$), or the interaction ($F(1, 106) = 0.16$, $p = .69$).

Discussion

The results do not support the hypothesis that a media literacy intervention based on critical thinking reduces the effects of cultivation, nor do they support the hypothesis that people who are high television viewers have higher levels of fear than low television viewers. The results also indicate that there was no interaction between amount of television viewing and the media literacy intervention.

Although the results do not support the hypotheses, conclusions should be drawn with caution because the study did not include a manipulation check for critical thinking. The questions used in the intervention were designed to induce critical thinking, but it is not known whether students actually engaged in critical thinking. In addition, it is not known how much attention to a media clip is necessary to affect a person's perception of the clip and to thus inhibit a heuristic response. By asking students in the no intervention group to pay attention to the news clip, we may have caused students to focus critically on the clip, thereby creating a sort of critical thinking intervention. Future researchers might test participants at variable times after the initial intervention, when the violence from the media clip might be remembered heuristically. Alternatively, a no intervention group might watch television while doing other activities so that critical thinking is minimized.

In addition, television viewing was defined as the number of hours of television that students reported watching per week. However, students may have misconstrued the concept of watching television. College students often multitask while using more than one electronic medium at a time, such as studying while watching television and using the computer. Thus students may have used different parameters to calculate the amount of time they watch television. Future studies may want to more carefully define television viewing.

Alternatively, it is possible that because of their advanced education college students have well developed critical thinking skills, thereby negating the effects of the intervention. Research with a more diverse sample, including variable ages and backgrounds, might yield different results. In fact, most of the research and theories on media literacy to date focus on school-aged children (Steinbrink & Cook, 2003). The current results suggest that a critical thinking intervention may be ineffective in the later stages of development. In addition, it is plausible that the current generation of college students is already media literate. Because college students

have grown up in the midst of the proliferation of electronic media ("Media Literacy," 2006), it is possible that they have already learned the concepts that encompass media literacy. A meta-analysis of research on cultivation theory might reveal this trend. To date, no known study has compared trends in level of cultivation across years and across different age groups. A meta-analysis might reveal that people who develop surrounded by electronic media experience less cultivation than people who develop with fewer sources of electronic media.

This study contributes to the literature in that there are no known experimental studies on the effects of teaching a critical media lesson or a series of critical media lessons. Classroom observations have revealed that incorporating popular media, such as movies, television, and print into the regular school curriculum, has helped students recognize themes across popular mediums and to think critically about what they see (e.g., questioning the scientific reality of special effects in movies in a physics class; Stevens, 2001). However, a media literacy intervention in which media literacy is the primary purpose of the lesson, and not just a residual effect, has not been studied (Stevens, 2001). In our intervention, we attempted to isolate a single component of media literacy—critical thinking about the media—instead of broadly incorporating media into the curriculum. A long-term intervention or a series of media lessons that emphasize critical thinking about the media would likely gain effectiveness if added to the school curriculum.

Cultivation affects how people interpret their world and, ultimately, the formation of attitudes regarding sexuality, family, politics, drug use, violence, religion, and more. Therefore, the prospect that education in media literacy reduces cultivation warrants further research attention.

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Table 1
Critical Thinking Questions

1. Because media messages are created by someone for a specific purpose and target a specific audience, what audience does this message target and what is the purpose?
2. What peripheral techniques do the newscasters use to help construct the message (e.g., images, words, music)?
3. If you were someone else (e.g., in a different country or a different ethnicity) how might you interpret this message? How might this change your perception?
4. How might this broadcast change your own personal social reality? In other words, when you go out tonight, will you think twice about something you do because of this broadcast?
5. How might a newscast like this distort someone's reality?

Table 2
Mean Fear Score (and SD) as a Function of Television Viewing and Intervention Condition

Intervention condition	Television viewing	
	High	Low
Intervention	33.39 (5.46) <i>n</i> = 29	31.00 (6.55) <i>n</i> = 22
No intervention	34.48 (7.38) <i>n</i> = 26	33.09 (6.18) <i>n</i> = 33