

Forbidden Fruit Versus Tainted Fruit: Effects of Warning Labels on Attraction to Television Violence

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Under growing public and government pressure, the television networks have adopted warning labels for violent programs. Tainted fruit theory posits that warning labels will decrease interest in violent programs, whereas forbidden fruit theory posits that warning labels will increase interest in violent programs. In Experiment 1, it was found that warning labels increased interest in violent programs, especially when the label source was authoritative. In Experiment 2, it was found that high-reactance individuals were especially interested in viewing violent programs with warning labels. In Experiment 3, it was found that warning labels increased interest in violent programs more than did information labels. These results are consistent with forbidden fruit theory. Those who are interested in reducing viewership of violent media might use these results as a caution against assuming that warning labels decrease viewership when warning labels may in fact increase viewership.

Well, that night we had *our* show; but there warn't only about twelve people there; just enough to pay expenses. . . . So next morning he got some big sheets of wrapping-paper and some black paint, and draw off some handbills and stuck them up all over the village. The bills said:

AT THE COURTHOUSE!
FOR THREE NIGHTS ONLY!
The World-Renowned Tragedians
DAVID GARRICK THE YOUNGER!
AND

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EDMUND KEAN THE ELDER!
Of the London and Continental Theatres,
In their thrilling tragedy of
THE KING'S CAMELOPARD
OR THE ROYAL NONESUCH!!!
Admission 50 cents

Then at the bottom was the biggest line of all, which said:

LADIES AND CHILDREN NOT ADMITTED.

"There," says he, "if that line don't fetch them, I don't know Arkansaw!"

—Mark Twain, *The Adventures of Huckleberry Finn*

Hollywood entertainment officials, under growing public and government pressure, have recently announced efforts to curb violence on television. One such effort is the use of warning labels for programs that contain excessively violent content. The television networks have agreed to use the warning labels for a trial period.

Television warning labels probably serve different functions for different groups. The entertainment industry, for example, might use warning labels to prevent censorship policies from being imposed by outside groups. Parents might use warning labels to monitor what their children watch on television. Viewers might use warning

labels to select programs that appeal to their interests. The experiments reported in this article were primarily concerned with the effect of warning labels on people's interest in viewing violence. There are two competing theories about the likely effects of warning labels on viewers' interest in violent media: the tainted fruit theory and the forbidden fruit theory (e.g., Christenson, 1992). The *tainted fruit theory* predicts that the labels will make violent programs less attractive to viewers, whereas the *forbidden fruit theory* predicts that the labels will make violent programs more attractive to viewers. It follows from the tainted fruit theory that if advisory labels for a given program are considered by the public as a warning of the potentially harmful effects of television violence, then fewer people will watch the program.

The forbidden fruit theory encompasses a number of psychological theories, such as reactance theory (J. Brehm, 1966, 1972; S. Brehm & J. Brehm, 1981; Wicklund, 1974) and commodity theory (Brock, 1968). According to reactance theory, when an individual's freedom to engage in a particular behavior is threatened or eliminated, the individual will experience *psychological reactance*, defined as an unpleasant motivational state that consists of pressures to re-establish the threatened or lost freedom. The more important the freedom is to the individual, the greater is the reactance when the freedom is threatened or eliminated. One method of re-establishing the freedom is to engage in the proscribed behavior. Therefore, social influence attempts can backfire, in that pressure toward change created by the influence agent may induce the person to move in the direction opposite from the influence effort, sometimes called a *boomerang effect*. Thus, if warning labels are perceived as an attempt at censorship, then reactance theory would predict that the labels should increase motivation to view television violence. According to commodity theory, any commodity that is perceived as unavailable, that cannot be obtained, or that can be obtained only with effort will be valued more than a commodity that can be obtained freely. A *commodity* is defined as "anything that has some usefulness or relevance to the person who possesses it and that can be conveyed from person to person" (Fromkin & Brock, 1973, p. 222). Symbolic or informational stimuli, such as television programs, can be considered commodities. Possible ways to restrict the

availability of media are to classify them into special categories such as using the Motion Picture Association of America's (MPAA) ratings of *G* for general audiences, *PG* for parental guidance suggested, *PG-13* for parental guidance suggested for children below age 13, *R* for admission restricted to those age 17 and above, *NC-17* for no rating and admission restricted to those age 17 and above, and *X* for adult audiences only, or expressing more qualifications about them (e.g., using warning labels). Thus, if television programs with warning labels are perceived to be less available than programs without warning labels, then commodity theory would predict that the labels should increase the value of the violent programs.

Is the empirical evidence most consistent with tainted fruit theory or with forbidden fruit theory? Unfortunately, there is a dearth of empirical evidence on the effect of warning labels on people's interest in viewing violence. In a survey study (Wurtzel & Surlin, 1978), a random sample of adults living in Athens, Georgia, were asked if television advisory warnings influenced their personal viewing or the choices they made for their children's viewing. Although more than 96% reported having seen advisory warnings on television, only 24% said that advisories influenced their decision to watch a program. Of those respondents who reported being influenced: 39% said that they did not watch the program; 37% said that they watched the program but with increased caution; and 24% said that they watched the program with increased interest. Among those respondents with children, 54% reported that advisories influenced their decision to let their children watch a program. Of those respondents who reported being influenced, 81% said that they did not let their children watch the program, 17% said that they watched the program with their children, and 2% said that they let their children watch the program anyway. One correlational study has examined the relation between advisory labels and interest in violent and sexually explicit television programs (Herman & Leyens, 1977). Participants were panel members of the French-language Belgian television network (RTB). Panel members noted every 15 min which television program they were watching, and they also rated how much they liked each program. The RTB regularly broadcasts advisories about films in order to alert the public, especially parents, to programs that contain violent or erotic

material. Herman and Leyens (1977) analyzed the RTB data over a 4-year period to determine if panel members were more likely to watch films with advisories than films without advisories. The results showed that even though panel members liked the films with and without advisories equally well, panel members were more likely to watch films with violence and sex advisories (49% and 50%, respectively) than films without advisories (44%). Unfortunately, it is extremely difficult to draw conclusions from this study because the advisories were completely confounded with film content and with panel member preferences for violent and sexually explicit films.

In an experimental study (Austin, 1980), high school students read descriptions of four fictitious films. Beneath the film description, the MPAA rating was noted (e.g., "This picture has been rated *R*: restricted, under-17-year-olds must be accompanied by a parent or guardian"). A Latin-square design was used to assign the MPAA ratings of *G*, *PG*, *R*, and *X* to the four film descriptions; each film description received each MPAA rating. For each film description, participants rated the likelihood that they would view the film. The results showed that MPAA ratings did not significantly influence participants' interest in viewing the films. Because the MPAA rating factor was within-subjects, this study had several problems. By reading four film descriptions, each with a different MPAA rating, participants could have become sensitized to the true purpose of the study (see Greenwald, 1976). Another potential problem had to do with the credibility of the MPAA ratings assigned to the film descriptions. It seems unlikely that each film description could be credibly rated *G*, *PG*, *R*, and *X*. Unfortunately, none of the film descriptions used in this study was included in the article.

Experiment 1

In Experiment 1, we tested the effects of warning labels on attraction to television violence. To control for viewer preferences for violent films, we used habitual exposure to televised violence as a covariate in the analyses. There were six experimental conditions: five label conditions and a no-label control condition. The network label was the one being used currently by American television networks: "Due to some violent content, parental

discretion is advised." The label currently used by the networks gives no source and implies that the harmful effects of television violence are limited to children. Empirical evidence, however, indicates that television violence increases aggression in viewers of all ages (for a recent meta-analysis, see Paik & Comstock, 1994). To examine characteristics of the warning label, we formed four additional labels by crossing the source of the message (U.S. surgeon general vs. no source) with the age of viewers who were the target of the warning (young viewers vs. all viewers). Because participants were college students, labels that stated television violence had harmful effects on viewers of all ages were expected to elicit more reactance and thus more attraction to television violence than were labels that stated television violence had harmful effects on young viewers.

Because the U.S. surgeon general is an authoritative source, labels attributed to the U.S. surgeon general were expected to elicit more reactance and thus more attraction to television violence than were labels not attributed to a source. Previous research has shown that reactance effects are stronger for authoritative sources than for nonauthoritative sources, perhaps because messages from authoritative sources produce more pressure to comply (e.g., Wicklund, 1974). For example, in an early study by J. and M. Brehm (see J. Brehm, 1966), college students were exposed to a high- or low-threat message strongly advocating teaching machines. In the high-threat condition, the concluding statement said that students "must by all means agree" with the message. In the low-threat condition, the concluding statement was omitted. The power of the communicator was manipulated by attributing the message either to a prominent professor or to a high school student. Participants reported their attitudes toward teaching machines before and after exposure to the message. The results showed that students were less likely to agree with the message when it was attributed to a prominent professor than when it was attributed to a high school student. In a similar study (Pennebaker & Sanders, 1976), signs discouraging graffiti were placed in toilet stalls in men's restrooms on a college campus. The signs issued either a direct command ("Do NOT Write on the Walls!") or a polite request ("Please, do not write on the walls.") not to write on the toilet stall walls. The two types of statements were attributed

either to an authoritative source ("J. R. Buck, Chief of Security") or to a nonauthoritative source ("J. R. Buck, Grounds Committeeman"). The results showed that the incidence of graffiti was significantly higher in the authoritative source conditions than in the nonauthoritative source conditions. The incidence of graffiti also was significantly higher in the direct command conditions than in the polite request conditions. Additional analyses revealed that the chief of security was perceived to be more authoritative than was the grounds committeeman and that the direct command was perceived to be more threatening than was the polite request.

In Experiment 1, participants were told that the study was part of a national consumer research project to evaluate made-for-television movies. Participants read descriptions of violent and non-violent films. In the label conditions, a warning label appeared below the descriptions of the violent films. After reading each film description, participants rated how much they wanted to view the film and how much they thought other adults and young children would like to view the film. From the list of film descriptions they rated, participants selected a film to watch; they also selected films, supposedly for other college students and for young children to watch.

Warning labels were expected to increase attraction to violent films. Participants in the label conditions were expected to express a greater desire to watch the violent films than were participants in the no-label control condition. Participants in the label conditions also were expected to choose a violent film to watch more often than were participants in the no-label control condition. Label effects were expected to be stronger when the U.S. surgeon general was the source than when there was no source and when all viewers were the target of the warning than when young viewers were the target of the warning.

Warning labels were not expected to influence the film ratings and choices that participants made for other college students because participants would not experience reactance. Warning labels were not expected to influence the film ratings and choices that participants made for young children because participants were expected to consider the violent films to be inappropriate for young children, regardless of whether they had labels.

Method

Participants

Participants were 362 undergraduate psychology students (182 men and 180 women). The data from 2 men were discarded because they expressed suspicion about the procedure. The final sample of participants consisted of 180 men and 180 women. There were 60 participants (30 men and 30 women) in each of the six experimental conditions. Students received extra course credit in exchange for their voluntary participation.

Film Descriptions

A separate group of 62 judges (31 men and 31 women), drawn from the same population as those who subsequently served in the experiment, rated descriptions of 28 fictitious, untitled made-for-television films. Half of the film descriptions were written for adults, and half were written for children. Within each age group, half of the film descriptions contained violence and half did not. Thus, there were four types of films: adult-violent, adult-nonviolent, child-violent, and child-nonviolent. An example of a violent-adult film description follows:

Nicoline Chester isn't your average femme fatale. She's a hired killer who has a way with words. She even has the police fooled into believing her innocence. Lieutenant David Otello isn't convinced, though. He pursues her forcefully after she kills his uncle, only to learn that he's the next target. Their final confrontation leads them into the Dallas Museum of Natural History where a bloodbath ensues. Otello discovers that Nicoline won't let anyone get in the way of her work.

An example of a nonviolent-adult film description follows:

Four college kids form a salsa and blues band and decide to go on tour for the summer. They get a little more than they bargained for when their van is hijacked by a bandit disguised as a stalled motorist. Fortunately, though, their own van breaks down only fifteen miles later. This hilarious comedy is a roller coaster of unbelievable events. From playing music in a gas station for fuel to begging for water at an Indian reservation, their summer tour is anything but relaxing.

An example of a violent-child film description follows:

Jeff and his friends spend the summer making an awesome fort in the woods nearby. Their fort is invaded by Ed, the neighborhood bully, who vows to overtake it by force if he has to. What follows is a battle between Jeff and Ed, as Jeff fights valiantly to keep the fort, which he knows is rightfully his. When Ed realizes that he cannot overtake the fort, he decides that no one should have it, and burns it down, leaving Jeff and his friends to rebuild their dream.

An example of a nonviolent-child film description follows:

Brooke has always dreamed of having her own horse, but her parents are too poor to buy her one. Brooke finds a job working at the livery stable for Mr. Dobson. Although Brooke loves all of the horses, she is especially fond of a young colt named Jack. Mr. Dobson gives Brooke the task of training Jack, and tells her that when Jack is grown she can keep him. After three years of working with Jack,

Brooke sees that her dream of owning a horse is about to become a reality. When Brooke arrives at work one morning, she finds that Jack has been stolen. After searching for Jack for one week, Mr. Dobson and the authorities give up. Brooke will not give up, however. She is determined to find her beloved Jack.

Judges indicated how interesting, exciting, and violent the films would be for young children, other adults, and themselves. Ratings were made along a 5-point Likert-type scale ranging from 1 = *not at all* to 5 = *extremely*. From the pool of 28 film descriptions, 12 were selected for the present study to have equal interest and excitement ratings but different violence ratings. Three films were selected from each of the four groups (i.e., adult-violent, adult-nonviolent, child-violent, and child-nonviolent). There were no significant sex differences in ratings of the film descriptions. The means and standard deviations for the different film types for the different audiences are given in Table 1.

Table 1
Comparisons of Types of Films on Different Rating Dimensions

Film type	Rating dimension					
	Interesting		Exciting		Violent	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Self						
Violent-adult	2.9 _{c,d,e}	1.2	3.0 _{b,c}	1.2	3.7 _b	1.3
Nonviolent-adult	2.9 _{c,d,e}	1.1	2.5 _{d,e,f}	1.1	1.5 _e	0.8
Violent-child	2.4 _{g,h}	1.1	2.3 _f	1.1	2.3 _c	1.2
Nonviolent-child	2.7 _{e,f,g}	1.2	2.4 _{e,f}	1.1	1.2 _e	0.5
Other adults						
Violent-adult	3.2 _{b,c}	1.0	3.3 _{a,b}	1.0	3.8 _b	1.0
Nonviolent-adult	3.2 _{b,c,d}	0.9	2.8 _{c,d,e}	1.0	1.4 _e	0.7
Violent-child	2.5 _{f,g,h}	0.9	2.4 _{e,f}	1.0	2.4 _c	1.2
Nonviolent-child	2.8 _{d,e,f}	0.9	2.6 _{d,e,f}	0.9	1.2 _e	0.5
Children						
Violent-adult	2.2 _h	1.1	2.6 _{d,e,f}	1.2	4.6 _a	0.9
Nonviolent-adult	2.9 _{c,d,e}	1.4	2.8 _{c,d}	1.4	1.9 _d	0.9
Violent-child	3.4 _{a,b}	1.1	3.6 _a	1.1	3.5 _b	1.1
Nonviolent-child	3.7 _a	1.1	3.5 _a	1.1	1.4 _e	0.7

Note. Subscripts refer to within-column comparisons. Means with the same subscript are not significantly different from each other at the .05 level by means of a paired *t* test. Bonferroni's procedure was used to control the experimentwise error rate. All ratings were made along a 5-point Likert-type scale ranging from 1 = *not at all* to 5 = *extremely*. Higher numbers indicate higher values on the dimension. Each mean represents average ratings from three films.

Warning Labels

Six label conditions were used in Experiment 1.

1. Network label: This was "Due to some violent content, parental discretion is advised."

2. The U.S. surgeon general's young viewers' label: This was "This film contains some violent content. The U.S. surgeon general has concluded that television violence has harmful effects on young viewers."

3. The U.S. surgeon general's all viewers' label: This was "This film contains some violent content. The U.S. surgeon general has concluded that television violence has harmful effects on viewers of all ages."

4. No-source young viewers' label: This was "This film contains some violent content. Television violence has harmful effects on young viewers."

5. No-source all viewers' label: This was "This film contains some violent content. Television violence has harmful effects on viewers of all ages."

6. No-label control condition.

A separate group of 100 judges (50 men and 50 women), drawn from the same population as those who subsequently served in the experiment, was used to determine whether labels were perceived as (a) more authoritative when the U.S. surgeon general was the label source rather than being a no-source label and (b) more personally applicable when all viewers had been the target of the warning than when only young viewers had been the target of the warning. Judges responded to the following three statements about the five warning labels: (a) the label is authoritative; (b) the label applies to me personally; and (c) the label puts pressure on viewers. The latter statement was added to test the hypothesis that the U.S. surgeon general warning labels puts more pressure on viewers than no-source warning labels. Ratings were made along a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The order of the warning labels was counterbalanced according to a Latin-square design (Cochran & Cox, 1957).

Because sex of judges and order of labels did not significantly influence the results, the data from men and women and the data from the different orders were combined for subsequent analyses. The rating means and standard deviations for the

Table 2
Comparisons of Warning Labels on
Different Rating Dimensions

Warning label	Rating dimension					
	Authoritative ^a		Applicable ^b		Pressure ^c	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Network	3.2 _b	1.1	2.0 _b	1.0	3.0 _b	1.1
U.S. surgeon general, young viewers	3.7 _a	1.0	2.0 _b	1.0	3.1 _b	1.1
U.S. surgeon general, all viewers	3.8 _a	1.0	2.8 _a	1.3	3.4 _a	1.0
No source, young viewers	3.4 _b	1.0	2.2 _b	1.2	3.1 _b	1.1
No source, all viewers	3.3 _b	1.0	2.8 _a	1.3	2.9 _b	1.1

Note. Subscripts refer to within-column comparisons. Means having the same subscript are not significantly different by a paired *t* test at the .05 level. Bonferroni's procedure was used to control the experimentwise error rate. All ratings were made along a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*.

^aAuthoritative = the label is authoritative. ^bApplicable = the label applies to me personally. ^cPressure = the label puts pressure on viewers.

different warning labels are given in Table 2. Three planned contrasts were performed on the ratings. The first contrast compared authoritative ratings for the U.S. surgeon general and no-source labels. The second contrast compared personally applicable ratings for the all viewers' and young viewers' labels. The third contrast compared pressure ratings for the U.S. surgeon general and no-source labels. All three contrasts were consistent with predictions. The labels were judged to be more authoritative when the U.S. surgeon general was the label source than when the label had no source, $t(99) = 4.80, p < .05, d = 0.48$.¹ The labels were judged to be more personally applicable when all viewers were the target of the warning than when young viewers were the target of the warning, $t(99) = 5.72, p < .05, d = 0.57$. Judges thought the U.S. surgeon general warning labels put more

¹ Cohen (1988) offered conventional values for small, medium, and large effects. With respect to the standardized mean difference, the conventional values for *ds* = 0.20, 0.50, and 0.80, respectively. With respect to the Pearson product-moment correlation coefficient, the conventional values for *rs* = .10, .30, and .50, respectively. According to Cohen, most of the effects in social sciences range from small to medium.

pressure on viewers than did the no-source warning labels, $t(99) = 3.89, p < .05, d = 0.39$.

Procedure

The experiment was conducted in a suite that contained a waiting room, four participant rooms, and one experimenter room. The experimenter communicated with the participants through an intercom system. One college-age man and 1 college-age woman reported to the waiting room where they were met by a male experimenter. Participants were told that a 7-year-old boy and a 7-year-old girl also were participating in the experiment but would arrive later. The ostensible reason for having the children arrive late was to give participants time to complete questionnaires before the children arrived. The participants were escorted to their individual rooms. Each participant was given a cover sheet and consent form. The cover sheet stated that the study was being conducted by the Department of Journalism and Mass Communication at Iowa State University, with the Department of Psychology cooperating on the project to assist with the measurement of attitudes. Participants were told that several elementary schools in the area also were participating in the study. The following cover story was used.

The present study is part of a National Consumer Research Project being conducted to evaluate "made-for-television movies." These untitled films have never been shown in movie theaters or on television. We want to see what types of films adults and children are interested in viewing. After reading and rating brief descriptions of 12 films, you will be asked to select a film for yourself, another male college student, another female college student, a 7-year-old boy, and a 7-year-old girl. You will then watch the film you selected for yourself, and the films selected for you other male and female college students. The other college students selected the films for you to watch from a different list of films during a previous session. Because there is not sufficient time to watch all three films in their entirety, 10-minute segments of the films have been videotaped. Finally, you will tell us how much you liked the films you watched. The children, who will be arriving later, will watch the films you select for them and will tell us how much they liked the films.

After informed consent was obtained, partici-

pants reported the number of hours per week they spent watching various types of television programs, including violent drama. The number of hours per week participants spent watching violent drama was included as a covariate in the analyses to control for preferences for television violence.

Participants then read 12 film descriptions. There were three films of each type (i.e., adult-violent, adult-nonviolent, child-violent, and child-nonviolent). The order of the film descriptions was counterbalanced according to a Latin-square design (see Cochran & Cox, 1957). In the label conditions, the warning labels appeared beneath the descriptions of the violent-adult and violent-child films. To increase the salience of the warning labels, we had them printed in uppercase letters and enclosed in asterisks. For each film, participants responded to the following statements: (a) I would like to watch this film; (b) other adults would like to watch this film; and (c) young children (e.g., 7-year-olds) would like to watch this film. Responses were made along a 7-point Likert-type scale ranging from $-3 = \textit{strongly disagree}$ to $3 = \textit{strongly agree}$.

Fifteen minutes after the participants arrived, the boy and girl supposedly arrived. Two cassette tape players were placed in each child's room. One machine played the voice of the "child" talking to an adult, whereas the other machine played a children's story with accompanying music (e.g., *The Velveteen Rabbit*).

Participants then selected from the list of film descriptions rated a film for themselves, films for the other college students in the next experiment, and films for the two 7-year-olds in the adjacent rooms. The list of individuals who would supposedly see the films (i.e., self, other male college student, other female college student, 7-year-old boy, and 7-year-old boy) was counterbalanced according to a Latin-square design (see Cochran & Cox, 1957). Participants were told that a film could be chosen more than once because extra copies of the films were available.

In each participant's room was a videotape player and 12 videotapes. The videotapes were clearly labeled *Film 1* through *Film 12*. After both participants had made their film selections, they handed the experimenter the films they selected for the children to watch. The experimenter showed participants how to operate the videotape player, told them to begin watching the film of their

choice, and then left the room. The experiment was terminated after participants began playing the videotaped film segment they had selected to watch. (The experimenter could see the participants put the videotapes in the machines through a one-way mirror.) After the experiment was terminated, both participants were brought back to the waiting area where they were questioned for suspicion and fully debriefed. During the oral debriefing, participants recalled whether they were in a label or no-label condition.

Results

Manipulation Checks

Over 92% of participants recalled whether they were in a label or no-label condition. Thus, the labels apparently were salient to participants. Because there were no significant differences between ratings of the nonviolent-adult and nonviolent-child films as a function of warning label main effects or interaction effects, ratings of the nonviolent-adult and nonviolent-child films were combined for subsequent analyses.

Although warning labels were not used for the nonviolent films, it is possible that among participants in the warning label conditions, the labels on the violent films influenced ratings of the nonviolent films. Analyses revealed that ratings of the nonviolent films were not significantly different in the various warning label conditions.

Because counterbalance order did not significantly influence film description ratings or film selections, the data from the different orders were combined for subsequent analyses.

Effects of Warning Labels on Desire to View Television Violence

A multivariate analysis of covariance (MANCOVA) was used to test the effects of warning labels on participants' liking ratings of films for themselves, other adults, and young children.² Sex differences also were analyzed. The covariate was the amount of time participants spent viewing televised violence. Effects involving label condition were interpreted by using planned contrasts. With six label conditions, five orthogonal contrasts were possible. The first contrast compared all the label conditions with the no-label control condition. The second contrast compared the network label condi-

tion with the other label conditions. The remaining three contrasts examined the effectiveness of the four labels formed by crossing label source with viewer age. The third contrast tested the main effect for label source (i.e., U.S. surgeon general vs. no source), the fourth contrast tested the main effect for viewer age (i.e., all viewers vs. young viewers), and the fifth contrast tested the Label Source \times Viewer Age interaction effect. Because the predicted interaction was a spreading type rather than a crossover type, the contrast weight was 3 for the U.S. surgeon general, all viewers condition, and -1 for the other three conditions (i.e., U.S. surgeon general, young viewers; no source, all viewers; and no source, young viewers). Because different predictions were made for different audiences, a separate MANCOVA was conducted for each audience (i.e., self, other adults, and young children).

Self. A MANCOVA revealed that the labels had a nearly significant effect on participants' desire to see the films, $F(5, 347) = 2.18, p < .10$. Because the interaction between label condition and film type was nonsignificant, $F(10, 692) = 1.11$, the ratings for the violent-adult and violent-child films were combined for the planned contrasts. Planned contrasts revealed that participants wanted to see the violent films more in the label conditions than in the no-label control condition, adjusted $M_s = 0.3$ and 0 , respectively, $F(1, 347) = 5.03, p < .05, d = 0.24$. No other contrasts were significant.

Other significant effects, less central to the hypotheses we were testing, also were found. Significant main effects were obtained for film type and sex, $F(2, 346) = 44.09, p < .05$, and $F(1, 347) =$

² Type I errors are more probable when repeated measures analyses are conducted because of the correlated nature of the data (Vasey & Thayer, 1987). Repeated measures analyses carry an additional assumption known as *sphericity*, which is said to exist "if and only if the variance of all pairwise differences between repeated measures is constant" (p. 479). Vasey and Thayer recommended the use of multivariate procedures to analyze repeated measures because multivariate procedures do not assume sphericity. The rating measures were therefore analyzed with a multivariate analysis of covariance (MANCOVA). In these analyses, label condition was the independent variable and sex was the moderator variable. To control for preferences for viewing violent films, we used the amount of time participants spent viewing televised violence as a covariate in the analyses.

8.20, $p < .05$. However, these main effects were qualified by a significant Film Type \times Sex interaction, $F(2, 346) = 6.48, p < .05$. Men wanted to see the violent-adult films more than did women, adjusted $M_s = 0.6$ and 0.1 , respectively, $F(1, 347) = 11.82, p < .05, d = 0.37$. Men also wanted to see the violent-child films more than did women, adjusted $M_s = 0.2$ and -0.1 , respectively, $F(1, 347) = 7.14, p < .05, d = 0.29$. Men and women did not significantly differ in their desire to see the nonviolent films, adjusted $M_s = 0.6$ and 0.7 , respectively, $F(1, 347) = 0.87, ns, d = 0.10$.

There was a significant main effect for exposure to televised violence on participants' desire to watch the films, $F(1, 347) = 15.73, p < .05$. This main effect, however, was qualified by a significant Exposure to Television Violence \times Film Type interaction, $F(2, 346) = 4.50, p < .05$. The more time participants spent watching televised violence, the more they wanted to watch the violent-adult and violent-child films, $F_s(1, 347) = 15.78$ and $9.61, p_s < .05$, respectively; $r_s = .24$ and $.20$, respectively. Exposure to televised violence was not significantly correlated with participants' desire to watch the nonviolent films, $F(1, 347) = 0.35, ns, r = .03$.

Other adults. A MANCOVA revealed that film type significantly influenced participants' ratings of how much other adults would like the films, $F(2, 346) = 146.06, p < .05$. Participants thought that other adults would like the violent-adult films most, followed respectively by the nonviolent and violent-child films, adjusted $M_s = 1.2, 0.9$, and 0.2 , respectively. No other effects approached statistical significance.

Young children. A MANCOVA found significant main effects for film type and sex on participants' ratings of how much young children would like to watch the films, $F(2, 346) = 1,002.30$, and $F(1, 347) = 6.16, p_s < .05$, respectively. These main effects, however, were qualified by a significant Film Type \times Sex interaction, $F(2, 346) = 4.04, p < .05$. Men thought that young children would like the violent-adult films more than did women, adjusted $M_s = -1.6$ and -2.0 , respectively, $F(1, 347) = 12.51, p < .05, d = 0.38$. Men and women did not differ significantly in their ratings of how much children would like to watch the violent-child films, adjusted $M_s = 0.1$ and 0 , respectively, $F(1, 347) = 0.94, ns, d = 0.10$. Likewise, men and women did not differ significantly in their

ratings of how much children would like to watch the nonviolent films, adjusted $M_s = 1.0$ and 0.9 , respectively, $F(1, 347) = 0.80, ns, d = 0.10$. No other effects approached statistical significance.

Effects of Warning Labels on Selection of Violent Films

Chi-square analyses were performed to test the effects of warning labels on the film choices participants made for themselves, for the other male and female college students in the next session, and for the 7-year-old boy and girl supposedly in the adjacent rooms. Sex differences in film choices also were examined. Because different predictions were made for the different audiences, a separate analysis was performed for each audience.

Self. Chi-square analysis revealed that labels significantly affected the film choices participants made for themselves, $\chi^2(10, N = 360) = 20.01, p < .05$. The overall chi-square table was partitioned into two subtables, one for violent films versus nonviolent films and the other for violent-adult films versus violent-child films (Reynolds, 1984). The chi-square was significant for the violent versus nonviolent subtable and was nonsignificant for the violent-adult versus violent-child subtable, $\chi^2(5, N = 360) = 13.06, p < .05$, and $\chi^2(5, N = 151) = 7.45, ns$, respectively. Planned contrasts revealed that more participants chose violent films when the U.S. surgeon general was the label source (50%) than when the label had no source (35%), $\chi^2(1, N = 240) = 5.52, p < .05, \phi = .15$. The Label Source \times Viewer Age contrast also was significant, $\chi^2(1, N = 240) = 10.03, p < .05, \phi = .20$. Participants chose violent films more often in the U.S. surgeon general, all viewers condition (60%) than in the other three conditions (i.e., U.S. surgeon general, young viewers; no source, all viewers; and no source, young viewers; 47%). No other contrasts approached significance.

Additional analyses revealed that film choices were not significantly different for men and women, $\chi^2(1, N = 360) = 2.60$. Most participants chose a nonviolent film to watch (58%), followed respectively by a violent-adult film (29%), and a violent-child film (13%).

Other male and female college students. Warning labels did not significantly influence the film choices participants made for the other male and

female college students, $\chi^2s(5, N = 360) = 3.85$ and 2.52, respectively. Most participants chose a violent-adult film for the other male college student (55%), followed respectively by a nonviolent film (32%), and a violent-child film (13%). Most participants chose a nonviolent film for the other female college student (63%), followed respectively by a violent-adult film (28%), and a violent-child film (9%). In addition, participant sex did not significantly influence the choices participants made for the other male and female college students, $\chi^2s(1, N = 360) = 0.05$ and 0.19, respectively.

Seven-year-old boy and girl. The violent-adult film category was deleted from the chi-square analysis for the boy because only 2 participants (both men) chose violent-adult films for the boy to watch. The results showed that warning labels did not significantly influence the film choices participants made for the 7-year-old boy, $\chi^2(5, N = 358) = 3.56$. Over 76% of the participants chose a nonviolent film for the boy to watch. Male participants chose violent-child films for the boy more often (28%) than did female participants (19%), $\chi^2(1, N = 359) = 4.10, p < .05$. The effects of warning labels and sex on the film choices participants made for girls could not be analyzed because over 98% of participants chose nonviolent films for the girl to watch.

Relation Between Liking Ratings and Film Choices

As expected, participants who wanted to watch the violent films also were more likely to select violent films over nonviolent films to watch, $r_{pb}(358) = .38, p < .05$.

Discussion

There are several explanations of the likely effects of advisory warning labels on attraction to television violence. The different theoretical explanations are summarized below, and the available evidence to support each approach are discussed.

Tainted Fruit Theory

The tainted fruit theory posits that if viewers consider advisory labels to be a warning of the potentially harmful effects of television violence, then they should be less likely to watch violent

films with warning labels than violent films without warning labels. This would especially be true if an authoritative source, such as the U.S. surgeon general, issues the warning. The major responsibility of the U.S. surgeon general is to warn the public about dangerous influences to their physical and mental health. For example, all tobacco products and advertisements contain a warning from the U.S. surgeon general about the harmful effects of tobacco. The U.S. surgeon general also has issued a warning about the harmful effects of television violence (see Surgeon General, 1972). A warning from the U.S. surgeon general indicates that the fruit is not just tainted but is probably toxic.

The results from the present experiment are inconsistent with the tainted fruit theory. Participants in the label conditions expressed a greater desire to see the violent films than did participants in the no-label control condition. In addition, more participants chose to watch a violent film over a nonviolent film when the U.S. surgeon general was the label source than when there was no label source. Thus, the tainted fruit theory must be rejected as an explanation for the results from Experiment 1.

Forbidden Fruit Theory

Reactance theory. If warning labels are perceived as an attempt at censorship, then reactance theory would predict that the labels should increase motivation to view violent films. The present study tested three deductions from reactance theory. First, reactance theory would predict that the warning labels should only influence the choices and ratings participants make for themselves. Reactance would not be induced when participants make choices for other people. Second, reactance effects should be greater when the warning is issued by an authoritative source than when the warning has no source because the former warning implies more pressure on people than does the latter warning. Third, reactance effects should be greater when the target of the warning is viewers of all ages than when the target of the warning is young viewers because participants fall in the former but not the latter age group.

The results from the present study were generally consistent with reactance theory. Warning labels increased attraction to violent films. The warning labels influenced the ratings and choices

participants made for themselves but did not influence the ratings and choices participants made for other college students and young children. Participants were more attracted to the violent films when the U.S. surgeon general was the label source than when the label had no source. In addition, participants chose violent films more often in the U.S. surgeon general, all viewers condition than in the other three conditions (i.e., U.S. surgeon general, young viewers; no source, all viewers; and no source, young viewers).

Commodity theory. If television films with warning labels are perceived to be more unavailable than films without labels, then commodity theory would predict that the labels should increase the value of the violent films. One way to restrict the availability of films is to express more qualifications about them (e.g., using warning labels). The present findings are consistent with commodity theory. Qualifications regarding the violent films, such as those made by the U.S. surgeon general, apparently increased the value of the violent films to participants.

Warning Labels Reduce Ambiguity Regarding the Violent Content of Films

An alternative explanation for the present findings is that people like to watch violent films, and the warning labels reduced ambiguity regarding the violent content of the films. Fromkin and Brock (1973) have suggested that restriction by itself has become a means of indicating the content of the restricted material. For example, age restrictions on magazines carry implications about the pornographic content of the magazines. Likewise, warning labels on films carry implications about the violent content of the films.

The data from the present study are not consistent with this alternative explanation. The film descriptions used in the present study were quite informative regarding the violent content of the films. The violent film descriptions were judged to be significantly more violent than were the nonviolent film descriptions (see Table 1). In addition, if the warning labels merely served as cues to reduce ambiguity regarding the violent content of films, then television viewing habits should have interacted with warning labels and film type to influence attraction to the violent films. More specifically, the positive relation between habitual

exposure to television violence and attraction to the violent films should have been stronger in the warning label conditions than in the no-label control condition. However, there were no significant Exposure to TV Violence \times Warning Label \times Film Type interactions. In summary, the evidence from Experiment 1 is most consistent with forbidden fruit theory.

Experiment 2

Although the labels used in Experiment 1 appear to have induced reactance in participants, this can only be inferred because no measures of perceived threat to personal freedom or censorship were included in Experiment 1. The omission of such measures was intentional because it was thought that they would only serve as demand characteristics for participants (see Orne, 1962). If measures of perceived threat to personal freedom or censorship had been included in Experiment 1, participants probably would have figured out that the actual purpose of the study had something to do with warning labels, guessed what the experimenter was trying to predict, and behaved in a manner that would either support or refute experimenter's predictions. As it was, only 2 of the 362 individuals who participated in Experiment 1 admitted to guessing the true purpose of the study.

Therefore, a second experiment was conducted to determine if the labels used in Experiment 1 induced reactance in participants. In Experiment 2, participants were classified as high or low in reactance according to their scores on the Therapeutic Reactance Scale (TRS; Dowd, Milne, & Wise, 1991). The TRS was constructed to measure individual differences in the tendency to experience psychological reactance when free behaviors are threatened or eliminated. Sample items from the TRS include: "If I am told what to do, I often do the opposite" and "I resent authority figures who try to tell me what to do." Participants were told to imagine seeing an advertisement for a film to be shown on network television containing either no label or one of the five labels used in Experiment 1. Participants then indicated whether they wanted to watch the film and whether they thought the label was trying to restrict the public's freedom to watch what they want.

If the labels induce reactance in viewers, then high-reactance participants should react more

strongly to the labels than should low-reactance participants. On the basis of reactance theory, the following predictions were made. Desire to watch the films with warning labels was expected to be greater in high-reactance participants than in low-reactance participants. The warning labels also were expected to be judged as more restrictive by high-reactance participants than by low-reactance participants. The label effects were expected to be stronger when the warning source was the U.S. surgeon general than when the warning had no source and when all viewers were the target of the warning than when young viewers were the target of the warning.

Method

Psychological Reactance Measure

The TRS contains 28 items that are rated on a 4-point Likert-type scale ranging from 1 = *strongly disagree* to 4 = *strongly agree*. The alpha coefficient for the scale was .84, and the test-retest correlation was .59 (Dowd, Milne, & Wise, 1991).

The convergent validity of the TRS has been established by correlating the TRS with other scales that should be theoretically related to reactance. Previous research has found a significant positive relation between internal locus of control and various measures of psychological reactance (see J. Brehm & S. Brehm, 1981). Morgan (1986) found that TRS scores correlated positively with internality scores on the Rotter Internal-External Locus of Control Scale (Rotter, 1966). Dowd and Wallbrown (1993) also found that scores on the TRS correlated positively with another reactance scale, the Questionnaire for Measuring Psychological Reactance (Fragebogen zur Messung der Psychologischen Reactanz; Merz, 1983).

The divergent validity of the TRS has been established by correlating the TRS with other scales that should not be theoretically related to reactance. Lukin, Dowd, Plake, and Kraft (1985) found that the TRS did not correlate significantly with either state or trait anxiety scores on the State-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lurshene, 1970) or with scores on the Beck Depression Inventory (Beck, 1967). Morgan (1986) found that scores on the TRS did not correlate significantly with a measure of counselor social influence (Counselor Rating Form-Short

Version; Corrigan & Schmidt, 1983). Thus, the TRS appears to measure a construct other than anxiety, depression, or counselor social influence.

A few studies have tested the construct validity of the TRS. For example, Graybar, Antonuccio, Boutilier, and Varble (1989) conducted a study to determine whether reactance moderates the effectiveness of physician advice to stop smoking. They hypothesized that high-reactance patients would comply less with high amounts of physician advice than with low amounts of physician advice because patients would perceive high amounts of advice as more threatening. The results were consistent with these predictions. In general, research has shown that high-reactance individuals are less receptive to counseling attempts than are low-reactance individuals (Dowd et al., 1988; Morgan, 1986).

Participants

From a pool of 498 undergraduate psychology students (241 men and 257 women) who completed the TRS as part of a battery of tests given in mass-testing sessions, 54 individuals (27 men and 27 women) who scored above the 75th percentile on the scale and 54 (27 men and 27 women) who scored below the 25th percentile were contacted and scheduled as participants. Percentiles were calculated separately for men and women because men had significantly higher TRS scores than did women; $M_s = 70.4$ and 67.8 , respectively, $t(496) = 3.91$, $p < .05$, $d = 0.35$. TRS alpha coefficients were .80 for women, .73 for men, and .77 for the total sample. In mass testing, participants also reported the number of hours per week they spent watching various types of television programs, including violent drama. In exchange for their voluntary participation, students received course credit. The mass testing and experiment proper sessions were separated by about 3 weeks.

Design

The design of the study was factorial with variables of label condition (network; U.S. surgeon general, young viewers; U.S. surgeon general, all viewers; no source, young viewers; no source, all viewers; and no-label control), reactance (low or high), and sex. The label condition variable was within-subjects, whereas the reactance and sex variables were between-subjects. To control for

preferences for violent media, the amount of time participants spent viewing violent drama was treated as a covariate in the analyses.

Procedure

Individuals participated in small groups, but they worked independently on the task. Each participant was given a test booklet that contained the following information: "Suppose that you see an advertisement for a film to be shown on network television. Please respond to the statements below if the film has the following label." As in Experiment 1, the labels were printed in uppercase letters and enclosed in asterisks. In the no-label control condition, participants were told: "Suppose that you see an advertisement for a film to be shown on network television. Please respond to the statement below if the film has no label."

Participants rated the following statements along a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*: (a) I would like to watch the film; and (b) The label is trying to restrict the public's freedom to watch what they want. Statement b was deleted in the no-label control condition. The order of label conditions was counterbalanced according to a Latin-square design (Cochran & Cox, 1957). After all participants finished the task, they were debriefed.

Results

Manipulation Checks

Because the order of the label conditions did not significantly influence ratings, the data from the different orders were combined for subsequent analyses.

Effects of Warning Labels and Reactance on Desire to View the Films

Because the label condition variable was within-subjects, a MANCOVA was used to test the effects of warning labels on desire to view the films (see Footnote 2). Reactance (high or low) and sex were between-subjects variables in the analysis, and the amount of time participants spent viewing televised violence was a covariate in the analysis. The MANCOVA found significant main effects for label, reactance, and sex on desire to view the

films, $F(5, 100) = 2.72, p < .05, F(1, 104) = 5.40, p < .05$, and $F(1, 104) = 3.99, p < .05$, respectively. However, these main effects, were qualified by significant interactions. As expected, there was a significant Label \times Reactance interaction, $F(5, 100) = 3.19, p < .05$. To interpret the interaction, we compared high- and low-reactance participants' scores for each of the five planned label contrasts performed in Experiment 1. High- and low-reactance participants' scores differed on the label versus no-label contrast, $t(106) = 2.62, p < .05$. As shown in Figure 1, high-reactance participants wanted to watch the films with labels more than did low-reactance participants, $t(105) = 2.51, p < .05, d = 0.49$. High- and low-reactance participants did not significantly differ in their desire to watch the films without labels, $t(105) = 1.04, ns, d = 0.20$. High- and low-reactance participants' scores tended to differ on the target audience contrast, $t(106) = 1.93, p < .10$. If all viewers were the target of the warning, high-reactance participants wanted to watch the films more than did low-reactance participants, adjusted $M_s = 3.2$ and 2.8, respectively, $t(105) = 2.68, p < .05, d = 0.52$. If young viewers were the target of the warning, high- and low-reactance participants did not differ significantly in their desire to watch the films, adjusted $M_s = 3.2$ and 2.9, respectively, $t(105) = 1.53, ns, d = 0.30$. High- and low-reactance participants' scores did not differ on the other contrasts.

Other significant effects, less central to the hypotheses being tested, also were found. There was a significant Label \times Sex interaction on desire to view the films, $F(5, 100) = 3.98, p < .05$. Sex

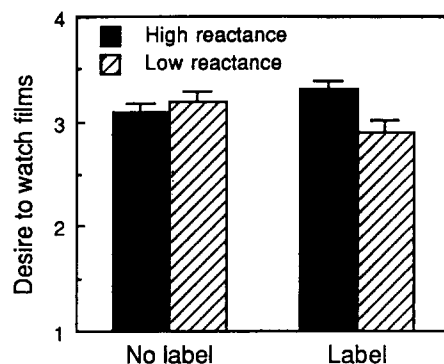


Figure 1. Moderating role of reactance in the effects of warning labels on the desire to see the films. Capped vertical bars denote 1 SE.

differences were found for the label versus no-label contrast, $t(106) = 3.10, p < .05$. Men wanted to watch the films with labels more than did women, adjusted $M_s = 3.2$ and 2.9 , respectively, $t(105) = 2.31, p < .05, d = 0.45$. In contrast, women wanted to watch the films without the labels more than did men, although the sex difference was not quite significant, adjusted $M_s = 3.2$ and 3.0 , respectively, $t(105) = 1.95, p < .10, d = 0.38$. Sex differences also were found for the network label versus other labels contrast, $t(106) = 2.96, p < .05$. Men wanted to see the films with labels other than the network label more than did women, adjusted $M_s = 3.2$ and 2.8 , respectively, $t(105) = 2.62, p < .05, d = 0.51$. Men and women did not significantly differ in their desire to see films with the network label, adjusted $M_s = 3.3$ and 3.3 , respectively, $t(105) = 0.36, ns, d = 0.07$. No sex differences were found for the other contrasts. Finally, there was a nearly significant positive relation between the number of hours spent watching violent drama and desire to watch the films, $F(1, 104) = 3.51, p < .10, r = .19$.

Effects of Type of Warning Label on Perceptions That the Warning Labels Were Trying to Restrict the Public's Freedom to Watch What They Wanted

As expected, the MANCOVA found that high-reactance participants thought the labels were more restrictive than did low-reactance participants, adjusted $M_s = 2.0$ and 1.7 , respectively, $F(1, 103) = 4.19, p < .05, d = 0.42$. In addition, there was a significant positive relation between the number of hours spent watching violent drama and judgments that warning labels were restrictive, $F(1, 103) = 5.45, p < .05, r = .22$. No other significant effects were found.

Relation Between Liking and Restrictive Ratings

As expected, participants who wanted to watch the films also thought the labels were restrictive, $r(106) = .25, p < .05$.

Discussion

Experiment 2 was conducted to determine if the labels used in Experiment 1 induced reactance in participants. If the labels did induce reactance in

viewers, then high-reactance participants should react more strongly to the labels than should low-reactance participants. In comparison to low-reactance participants, high-reactance participants were expected to express a greater desire to see films with warning labels and were expected to judge the labels as more restrictive. The results were consistent with these predictions. Even after controlling for habitual exposure to televised violence, high-reactance participants wanted to watch the films with warning labels more than did low-reactance participants. In addition, high-reactance participants viewed the labels as more restrictive than did low-reactance participants. Thus, it appears that the labels did in fact induce reactance in participants.

Stronger label effects also were expected when the label source was the U.S. surgeon general than when the label had no source and when all viewers were the target of the warning than when young viewers were the target of the warning. One predicted finding was found. High-reactance participants expressed a greater desire to see the films when all viewers were the target of the warning than did low-reactance participants. High- and low-reactance participants did not significantly differ in their desire to see the films when young viewers were the target of the warning. The other findings were in the predicted direction, but they were not statistically significant.

Experiment 3

The evidence from Experiments 1 and 2 are most consistent with forbidden fruit theory. The results from Experiment 1 showed that people were more attracted to the violent films when they had warning labels than when they did not have warning labels, especially when the label source was authoritative (i.e., the U.S. surgeon general). The results from Experiment 2 showed that warning labels aroused reactance in participants. Thus, we are faced with a dilemma: how to reduce attraction to television violence without inducing reactance in viewers. One alternative to using warning labels is to use information labels. Information labels (e.g., "This film contains some violence") might induce less reactance in viewers than warning labels (e.g., "This film contains some violence. Viewer discretion is advised"). Both types of labels inform the viewer that the film

contains violence. However, the warning label has an additional component in that it tells people what to do. It is this additional component that possibly arouses reactance in viewers. Experiment 3 contrasted the effects of warning labels and information labels on attraction to television violence. The amount of violence depicted in the films also was manipulated. There were five experimental conditions: four label conditions and a no-label control condition. The label conditions were formed by crossing the amount of violence in the film (some violence vs. extreme violence) with the type of label (warning vs. information). Male and female college students first reported the amount of time they spent watching different types of television programs, including violent drama. Then, participants read descriptions of the adult versions of the violent and nonviolent films used in Experiment 1. In the label conditions, the label appeared below the descriptions of the violent films in upper case letters. After reading each film description, participants rated how much they wanted to view the film and how interesting, exciting, and violent they thought the film would be. Finally, participants selected one of the films to watch.

To control for viewer preferences for violence, we used habitual exposure to televised violence as a covariate in the analyses. Because warning labels were expected to produce more reactance than information labels, participants in the warning label conditions were expected to express a greater desire to see the violent films and to choose a violent film to watch more often than were participants in the information label conditions. Because the information labels were not expected to produce reactance, no significant differences were predicted between the information label and no-label conditions on either dependent measure. If warning labels inform the public only about the amount of violence in programs, then attraction to television violence should not significantly differ in the warning and information label conditions because both types of labels convey the same information. The information conveyed to the public, however, differs in the extreme-violence and some-violence conditions. If labels are only informational, then attraction to extreme television violence should be higher for heavy viewers of television violence than for light viewers of television violence, regardless of the type of label.

Method

Participants

Participants were 180 undergraduate psychology students (90 men and 90 women). There were 36 participants (18 men and 18 women) in each of the five experimental conditions. Students received extra course credit in exchange for their voluntary participation.

Film Descriptions

The film descriptions used were the six film descriptions for adults (three violent and three nonviolent) used in Experiment 1. The film descriptions for children were not used in Experiment 3 because participants did not select films for children.

Experimental Conditions

Five experimental conditions were used in the present study: four label conditions and a no-label control condition. The labels conditions were as follows:

1. Some violence, warning label: The label was "This film contains some violence. Viewer discretion is advised."
2. Some violence, information label: This label was "This film contains some violence."
3. Extreme violence, warning label: This label was "This film contains extreme violence. Viewer discretion is advised."
4. Extreme violence, information label: This label was "This film contains extreme violence."

A separate group of 100 judges (50 men and 50 women), drawn from the same population as those who subsequently served in the experiment, was used to determine whether the warning labels were perceived as more threatening than were the information labels and whether films were perceived as more violent if the label said that the film contained extreme violence than if the label said the film contained some violence. Judges responded to the following statements about the four labels: (a) The film is probably violent; (b) the primary purpose of the label is to inform viewers of the film's violent content; and (c) the primary purpose of the label is to warn viewers of the film's violent content. Statements b and c were deleted in

the no-label control condition. Ratings were made along a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. The order of the warning labels was counterbalanced according to a Latin-square design (Cochran & Cox, 1957). There were 10 men and 10 women in each of the five order conditions.

Because the order of labels did not significantly influence ratings, the data from the different orders were combined for subsequent analyses. There were no sex differences on any of the dimensions except violence ratings, $F(1, 98) = 11.29, p < .05$. Women thought the films would be more violent than did men. However, sex did not interact with label condition to influence violence ratings, $F(4, 95) = 1.51$. Therefore, the data from men and women were combined for subsequent analyses. The rating means and standard deviations for the different label conditions are given in Table 3. For violence ratings, three planned contrasts were performed. The first contrast compared violence ratings for films with and without labels. The second contrast compared violence ratings when the label said the film contained extreme violence versus some violence. The third contrast compared whether warning labels differed from information labels in their attempt to warn the

public about the film's violent content. All three contrasts were consistent with predictions. Judges said they thought that films with labels would be significantly more violent than films without labels, $t(99) = 13.36, p < .05, d = 1.34$. Violence ratings were significantly higher in the extreme-violence label conditions than in the some-violence label conditions, $t(99) = 13.36, p < .05, d = 1.34$. In comparison to the information labels, judges said they thought that the primary purpose of the warning labels was to warn viewers of the film's violent content, $t(99) = 6.15, p < .05, d = 0.61$. As shown in Table 3, there were no significant differences between the different labels in the amount of information they conveyed about the film's violent content.

Procedure

Experiment 3 was conducted in the same location as Experiment 1. Participants were first escorted to their individual rooms. Each participant was then given a cover sheet and consent form. The cover story was similar to the one used in Experiment 1:

The present study is part of a National Consumer Research Project being conducted to evaluate made-for-television movies. These untitled films have never been shown in movie theaters or on television. We want to see what types of films people are interested in viewing. After reading and rating brief descriptions of 6 films, you will select a film to watch. Because there is not sufficient time to view the entire film, 30-minute segments of the films have been videotaped. Finally, you will tell us how much you liked the film you watched.

Next, participants reported the number of hours per week they spent watching various types of television programs, including violent drama. The number of hours per week participants spent watching violent drama was included as a covariate to control for habitual exposure to televised violence. Participants then read six film descriptions (three violent and three nonviolent). The order of the film descriptions was counterbalanced according to a Latin-square design (see Cochran & Cox, 1957). As in Experiment 1, the labels were printed in uppercase letters beneath the descriptions of the violent films and were enclosed in asterisks. For each film description, participants responded

Table 3
Comparisons of Warning Labels on
Different Rating Dimensions

Warning label	Rating dimension					
	Violent ^a		Warn ^b		Inform ^c	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Extreme violence, information label	4.5 _a	1.0	3.7 _{b,c}	1.2	4.0 _a	1.0
Extreme violence, warning label	4.7 _a	0.8	4.2 _a	1.0	4.0 _a	1.0
Some violence, information label	3.8 _b	1.0	3.5 _c	0.9	4.0 _a	1.0
Some violence, warning label	4.0 _b	0.9	4.0 _b	1.3	4.0 _a	1.0
No-label control	2.7 _c	0.9				

Note. Subscripts refer to within-column comparisons. Means having the same subscript are not significantly different by a paired *t* test at the .05 level. Bonferroni's procedure was used to control the experimentwise error rate. All ratings were made along a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*.

^aViolent = the film is probably violent. ^bWarn = the primary purpose of the label is to warn the public about the film's violent content. ^cInform = the primary purpose of the label is to inform the public about the film's violent content.

to the following statements: (a) "I would like to watch this film"; (b) "This film is probably interesting"; and (c) "This film is probably exciting." The latter two statements were used as covariates in the analyses. Responses were made along a 10-point Likert-type scale ranging from 1 = *strongly disagree* to 10 = *strongly agree*.

In each participant's room was a videotape player and six videotapes. The videotapes were clearly labeled *Film 1* through *Film 6*. The experimenter showed participants how to operate the videotape player, told participants to begin watching the film of their choice, and then left the room. The experiment was terminated after participants began playing the videotaped film segment they had selected. Finally, all participants were brought back to the waiting area where they were questioned for suspicion and fully debriefed.

Results

Manipulation Checks

Although labels were not used for the nonviolent films, it is possible that among participants in the label conditions, the labels on the violent films influenced ratings of the nonviolent films. Analyses revealed that ratings of the nonviolent films were not significantly different in the various warning label conditions. Because counterbalance order did not significantly influence film description ratings or film selections, the data from the different orders were combined for subsequent analyses.

Effects of Warning Labels on Desire to View Television Violence

A 5 (label condition: extreme violence, warning label; extreme violence, information label; some violence, warning label; some violence, information label) \times 2 (sex) analysis of covariance (ANCOVA) was used to analyze film liking ratings. The covariates were the number of hours per week participants spent watching violent television and ratings of how interesting and exciting participants thought the films would be. Effects involving label condition were interpreted with planned contrasts. Because there were five label conditions, four planned contrasts were performed. The first contrast compared all the label conditions with the no-label control condition. The second contrast

compared the some violence conditions with the extreme violence conditions. The third contrast compared the information label conditions with the warning label conditions. The fourth contrast compared the information label conditions with the no-label control condition.

The ANCOVA found a significant effect for label condition, $F(4, 167) = 2.49, p < .05$. As expected, participants in the warning label conditions wanted to watch the violent films more than did participants in the information label conditions, adjusted $M_s = 6.1$ and 5.6 , respectively, $F(1, 167) = 5.61, p < .05, d = 0.37$. No other contrasts approached significance. As expected, the information label versus no-label control contrast was nonsignificant, $F(1, 167) = 0.04$; information labels did not increase participants' desire to watch the violent films.

Other effects, less central to the hypotheses we were testing, also were found. Interesting and exciting ratings of the violent films were positively related to participants' desire to watch the violent films, $F_s(1, 167) = 48.08$ and 13.52 , respectively, $p_s < .05; r_s = .70$ and $.66$, respectively.

Effects of Warning Labels on Selection of Violent Films

Chi-square analyses were performed to test the effects of labels on the film choices participants made. Sex differences in film choices also were examined. Label condition did not significantly influence film selections, $\chi^2(4, N = 180) = 3.20$, and none of the contrasts was significant. Men were more likely to choose a violent film to watch (47%) than were women (31%), $\chi^2(1, N = 180) = 4.58, p < .05, \phi = .16$.

Relation Between Liking Ratings and Film Choices

As expected, participants who wanted to watch the violent films also were more likely to select a violent film to watch, $r_{pb}(178) = .47, p < .05$.

Discussion

In Experiment 3, we contrasted the effects of warning labels with the effects of information labels on attraction to television violence. Warning

labels were expected to produce reactance, and thus more attraction to television violence than were information labels. Because information labels were not expected to produce reactance, information labels were not expected to increase attraction to television violence. As expected, participants expressed a greater desire to watch the violent films when they had warning labels than when they had information labels. Information labels did not increase viewers' desire to watch the violent films. Thus, it appears that it is possible to convey information about the violent content of a television program without inducing reactance in viewers.

Although it is probably true that warning labels reduce ambiguity regarding the violent content of television programs, the results from Experiment 3 cannot be interpreted in this way. As shown in Table 3, the information labels were as informative regarding the violent content of films as were the warning labels. If labels are only informational, then habitual exposure to television violence should have been positively correlated with desire to see the violent films with labels, regardless of the type of label. However, there was no significant Exposure to TV Violence \times Label interaction for desire to see the violent films, $F(4, 162) = 0.67, ns$.

Significant results were not obtained for the film choice measure, perhaps because this measure was less sensitive than the measure of participants' desire to watch the violent films. However, the results for the film choice measure were in the predicted direction. It is also worth noting that there was a significant positive relation between participants' desire to watch the violent films and whether they chose a violent film to watch.

General Discussion

Warning labels probably serve different functions for different groups. For the entertainment industry, warning labels might serve the function of averting censorship policies being imposed by outside groups. For parents, warning labels might serve the function of assisting them in screening out material that they believe might be harmful or undesirable for their children. For viewers, warning labels might serve the function of helping them to select material that appeals to their interests. Each of these groups might extract different lessons from the current findings. The entertainment

industry might use these results to increase viewer interest in their programs by shifting the wording of their labels to include strong warnings from an authoritative source. Somewhat ironically, the industry could portray this to the public as an attempt to be more sensitive to the potential harmful effects of violent media viewing while having the effect of increasing people's viewing of violent media. Parents and policymakers who are interested in reducing viewership of violent media might use these results as a caution against assuming that warning labels decrease viewership when warning labels may in fact increase viewer interest.

Warning labels are designed to serve as an alternative to censorship, on the one hand, and the public's right to avoid exposure to unwanted media violence on the other. American society seems to be moving more and more toward the idea that warning labels are desirable for a variety of products from fatty foods to Internet access. Any unintended effects of particular wordings of warning labels, such as increasing viewer interest in materials that might be harmful, should be considered carefully.

The dearth of empirical literature on warning labels, in conjunction with the somewhat counterintuitive results reported here, underscores the practical import of this research and the need for additional research. The results from hundreds of studies have shown that viewing violence increases aggression (e.g., Hearold, 1986; Huston et al., 1992; National Institute of Mental Health, 1982; Paik & Comstock, 1994; Surgeon General, 1972; Wood, Wong, & Chacere, 1991). Because they increase interest in violent media, warning labels might also indirectly increase the level of violence in American society.

In summary, the evidence from the experiments reported in this article is most consistent with forbidden fruit theory (e.g., reactance theory and commodity theory). Although Mark Twain (1884/1963) wrote *The Adventures of Huckleberry Finn* long before reactance and commodity theories were proposed, he understood the principles behind these theories well. In the novel, to increase attendance at a show, one of Twain's characters added the following line to the handbills advertising the show: "LADIES AND CHILDREN NOT ADMITTED" (p. 178). Like the last line of this handbill, the warning labels used in the present

experiments increased people's attraction to television violence. It seems that people are more attracted to media presentations when they are told that the presentations are prohibited for certain audiences, especially if they are a member of the audience to whom the restriction applies.

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The Publications and Communications Board has opened nominations for the editorship of *Developmental Psychology* for the years 1999-2004. Carolyn Zahn-Waxler, PhD, is the incumbent editor.

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