Chapter 11

Fright Reactions to Mass Media

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The purpose of this chapter is to investigate fright reactions produced by mass media presentations. First, research findings related to the prevalence and intensity with which feelings of fear are experienced as a result of exposure to media drama are reviewed. Then the paradox that fright reactions to media fiction occur at all is discussed, and an explanation is proposed based on principles of stimulus generalization. The theory is then refined to include other factors that are needed to account for observed effects in response to both dramatic and nonfictional presentations. Developmental differences in the media stimuli that frighten children and in the effectiveness of coping strategies are then discussed. Finally, gender differences are explored.

FEELINGS OF FRIGHT IN REACTION TO THE SCREEN

Anyone who has ever been to a horror film or thriller appreciates the fact that exposure to television shows, films, and other mass media presentations depicting danger, injury, bizarre images, and terror-stricken protagonists can induce intense fright responses in an audience. Most of us seem to be able to remember at least one specific program or movie that terrified us when we were children and that made us nervous, remained in our thoughts, and affected other aspects of our behavior for some time afterward. And this happened to us even after we were old enough to know that what we were witnessing was not actually happening at the time and that the depicted dangers could not leave the screen and attack us directly. These reactions can also occur when we know that what is being portrayed did not actually happen; at times we may have such reactions even when we understand that there is no chance that the depicted events could ever occur.
The predominant interest in this chapter is fright as an immediate emotional response that is typically of relatively short duration, but that may endure, on occasion, for several hours, days, or even longer. The focus here is on emotional reactions involving components of anxiety, distress, and increased physiological arousal that are frequently engendered in viewers as a result of exposure to specific types of media productions.

Research interest in the phenomenon of fright reactions to mass media goes back as far as Herbert Blumer's (1933) studies of children’s fright reactions to movies. Although sporadic attention was paid to the media as a source of children’s fears in the succeeding several decades, research attention began to focus on this issue more prominently in the 1980s. One reason for this more recent focus on fright may have been the release of several blockbuster frightening films in the 1970s. As anecdotal reports of intense emotional responses to such popular films as Jaws and The Exorcist proliferated in the press, public attention became more focused on the phenomenon. Although many adults experience such reactions, the major share of public concern has been over children’s responses. The furor over children’s reactions to especially intense scenes in the 1984 movies Indiana Jones and the Temple of Doom and Gremlins prompted the Motion Picture Association of America to add “PG-13” to its rating system in an attempt to caution parents that, for whatever reason, a film might be inappropriate for children under the age of 13 (Zoglin, 1984). In addition, the rapid expansion in the number of cable channels has meant that most films produced for theatrical distribution, no matter how brutal or bizarre, eventually end up on television and thus become accessible to large numbers of children, often without their parents’ knowledge. Finally, as television news became more graphically visual and sensational in the 1990s, observers began speculating about the effects of such images on children’s psychological health. The September 2001 terrorist attacks on New York and Washington, DC, intensified these concerns.

Prevalence and Intensity of Media-Induced Fright Reactions

As early as the 1930s Blumer (1933) reported that 93% of the children he questioned said they had been frightened or horrified by a motion picture. More recently, about 75% of the respondents in two separate samples of preschool and elementary school children in Wisconsin said that they had been scared by something they had seen on television or in a movie (Wilson, Hoffner, & Cantor, 1987).

In other research, a survey of more than 2,000 third through eighth graders in Ohio public schools revealed that as the number of hours of television viewing per day increased, so did the prevalence of symptoms of psychological trauma, such as anxiety, depression, and posttraumatic stress (Singer, Slovak, Frierson, & York, 1998). Moreover, a survey of the
Fright Reactions to Mass Media

parents of almost 500 public schoolchildren in kindergarten through fourth grade in Rhode Island revealed that the amount of children's television viewing (especially television viewing at bedtime) and having a television in their own bedroom were significantly related to sleep disturbances (Owens et al., 1999). Although these survey data cannot rule out the alternative explanation that children experiencing traumas or sleep difficulties are more likely to turn to television for distraction, they are consistent with the conclusion that exposure to frightening and disturbing images on television contributes to a child's level of stress and anxiety. Indeed, 9% of the parents in the study by Owens et al. (1999) reported that their child experienced TV-induced nightmares at least once a week.

An experimental study suggests that witnessing scary media presentations may also lead children to avoid engaging in activities related to the events depicted (Cantor & Omdahl, 1991). In this study, kindergarten through sixth-grade children who were exposed to dramatized depictions of a deadly house fire from Little House on the Prairie increased their self-reports of worry about similar events in their own lives. Moreover, they were also less interested in learning how to build a fire in a fireplace than were children who were not shown the episode. Similarly, children who saw a scene involving a drowning expressed more concerns about water accidents and were less willing to learn canoeing than were children who had not watched that scene. Although the duration of such effects was not measured, the effects were undoubtedly short lived, especially because debriefings were employed and safety guidelines were taught so that no child would experience long-term distress (Cantor & Omdahl, 1999).

There is an increasing body of evidence, in fact, that the fear induced by mass media exposure is often long lasting, with sometimes intense and debilitating effects (Cantor, 1998). In a study designed to assess the severity of enduring fright reactions to mass media, Johnson (1980) asked a random sample of adults whether they had ever seen a motion picture that had disturbed them "a great deal." Forty percent replied in the affirmative, and the median length of the reported disturbance was 3 days. Respondents also reported on the type, intensity, and duration of symptoms such as nervousness, depression, fear of specific things, and recurring thoughts and images. Based on these reports, Johnson judged that 48% of these respondents (19% of the total sample) had experienced, for at least 2 days, a "significant stress reaction" as the result of watching a movie.

Recent retrospective studies of adults' detailed memories of having been frightened by a television show or movie provide more evidence of the severity and duration of media-induced fear (Harrison & Cantor, 1999; Hoekstra, Harris, & Helmick, 1999). In these studies, involving samples of undergraduates from three universities, the presence of vivid memories of enduring media-induced fear was nearly universal. All of the participants in one study (Hoekstra et al., 1999) reported such an incident. In the other
study (Harrison & Cantor, 1999), 90% of the participants reported an intense fear reaction to something in the media, in spite of the fact that the respondents could receive full extra credit for participating in the study if they simply said "no" (meaning "I never had such an experience"), and thereby avoid writing a paper and filling out a three-page questionnaire.

Both studies revealed a variety of intense reactions, including generalized anxieties, specific fears, unwanted recurring thoughts, and disturbances in eating and sleeping. Moreover, Harrison and Cantor (1999) reported these fears to be long lasting: One-third of those who reported having been frightened said that the fear effects had lasted more than a year. Indeed, more than one-fourth of the respondents said that the emotional impact of the program or movie (viewed an average of six years earlier) was still with them at the time of reporting.

The most extreme reactions reported in the literature come from psychiatric case studies in which acute and disabling anxiety states enduring several days to several weeks or more (some necessitating hospitalization) are said to have been precipitated by the viewing of horror movies such as The Exorcist, Invasion of the Body Snatchers, and Ghostwatch (Buzzuto, 1975; Mathai, 1983; Simons & Silveira, 1994). Most of the patients in the cases reported had not had previously diagnosed psychiatric problems, but the viewing of the film was seen as occurring in conjunction with other stressors in the patients' lives.

A STIMULUS GENERALIZATION APPROACH TO MEDIA-INDUCED FEAR

As can be seen from the literature summarized here, there is a good deal of evidence regarding viewers' experiences of fear in response to mass media presentations. The next part of this chapter is devoted to speculations about why such fear reactions occur and the factors that promote or inhibit their occurrence.

Fear is generally conceived of as an emotional response of negative hedonic tone related to avoidance or escape, due to the perception of real or imagined threat (e.g., Izard, 1977). A classic fear-arousing situation is one in which the individual senses that he or she is in physical danger, such as on encountering a poisonous snake on a walk through the woods. Fear can be conceived of as a response involving cognitions, motor behavior, and excitatory reactions that, except under extreme conditions, prepare the individual to flee from the danger.

Using this definition of fear, it is not difficult to explain the public terror that was produced by perhaps the most infamous frightening media drama on record—the 1938 radio broadcast of H. G. Wells' War of the Worlds. Many people who tuned in late thought they were listening to a live news bulletin
informing them that Martians were taking over the United States (Cantril, 1940). Thus, if they believed what they heard, they justifiably felt that their own lives and indeed the future of their society were in great peril.

But in typical situations in which people are exposed to mass media drama, the audience understands that what is being depicted is not actually happening; in many cases, they know that it never did happen; and in some cases, they know that it never could happen. Objectively speaking, then, the viewer is not in immediate danger. Why, then, does the fright reaction occur? Although fright responses to media presentations are undoubtedly the result of the complex interaction of a variety of processes, a preliminary explanation for this phenomenon is proposed, based on the notion of stimulus generalization (see Pavlov, 1927). In conditioning terms, if a stimulus evokes either an unconditioned or conditioned emotional response, other stimuli that are similar to the eliciting stimulus will evoke similar, but less intense emotional responses. This principle implies that, because of similarities between the real and the mediated stimulus, a stimulus that would evoke a fright response if experienced firsthand will evoke a similar, but less intense response when encountered via the mass media. In order to explore the implications of this explanation, it should be instructive to identify major categories of stimuli and events that tend to induce fear in real-life situations and that are frequently depicted in frightening media productions, and, second, to delineate the factors that should promote or reduce the viewer’s tendency to respond emotionally to the mediated stimulus.

Stimuli and Events that Generally Produce Fear

Based on a review of the literature on the sources of real-world fears and on the effects of frightening media, three categories of stimuli and events that tend to produce fear in real-life situations and that occur frequently in frightening presentations are proposed: (a) dangers and injuries, (b) distortions of natural forms, and (c) the experience of endangerment and fear by others. These categories are obviously not mutually exclusive: On the contrary, a frightening scene usually involves more than one of these categories.1

1These categories are also not considered exhaustive. Many theories have proposed additional categories of stimuli that readily evoke fear, such as certain types of animals (especially snakes; see Jerard & Holmes, 1935; Yerkes & Yerkes, 1936) and loud noises, darkness, and stimuli related to loss of support (see Bowlby, 1973). These categories are not discussed separately here because it seems that in mass media productions, such stimuli tend to co-occur with danger or signal its inescence. For example, the snakes, bats, and spiders in horror films are usually depicted as poisonous as well as repulsive. Sudden loud noises, darkness, and the perception of rapid movement are often used to intensify the perceived dangerousness of situations.
Dangers and Injuries. Stimuli that are perceived as dangerous should, by definition, evoke fear. The depiction of events that either cause or threaten to cause great harm is the stock-in-trade of the frightening film. Natural disasters such as tornadoes, volcanoes, plagues, and earthquakes; violent encounters on an interpersonal, global, or even intergalactic level; attacks by vicious animals; and large-scale industrial and nuclear accidents are typical events in frightening media fare. If any of these events were witnessed directly, the onlooker would be in danger, and fear would be the expected response. In addition, because danger is often present when injuries are witnessed, the perception of injuries should come to evoke fear as a conditioned response, even in the absence of the danger that produced the injuries. Through stimulus generalization, one might thus expect mediated depictions of danger, violence, and injury to produce fright reactions as well. Reports of fright produced by depictions of dangerous stimuli in media drama abound in the survey and experimental literature (e.g., Cantor, 1998; Harrison & Cantor 1999).

Distortions of Natural Forms. In addition to dangerous stimuli and the outcomes of dangerous situations, a related set of stimuli that typically evoke fear might be referred to as deformities and distortions, or familiar organisms in unfamiliar and unnatural forms. Hebb (1946) observed fear responses to such "deviations from previously experienced patterns" in chimpanzees and argued that such responses are spontaneous, in that they do not require conditioning. Organisms that have been mutilated as a result of injury could be considered to fall into this category as well as the previous category. In addition, distortions that are not the result of injury are often encountered in thrillers in the form of realistic characters like dwarves, hunchbacks, and mutants. Moreover, monsters abound in thrillers. Monsters are unreal creatures that are similar to natural beings in many ways, but deviant from them in other ways, such as through distortions in size, shape, skin color, or facial configuration. In scary movies, monstrous and distorted characters are typically, but not universally, depicted as evil and dangerous. Monsters, ghosts, vampires, mummies, and other supernatural beings are frequently cited as sources of children's fear in both surveys and anecdotal reports (e.g., Cantor, 1998; Cantor & Sparks, 1984).

The Experience of Endangerment and Fear by Others. Although in some cases viewers seem to respond directly to depictions of fear-evoking stimuli such as dangers, injuries, and distortions, in most dramatic presentations these stimuli are shown to affect the emotional responses and outcomes of depicted characters. In many cases, the viewer can be said to respond indirectly to the stimuli through the experiences of the charac-
11. **Fright Reactions to Mass Media**

One mechanism underlying such responses is empathy. Although there is controversy over the origins of empathic processes (see Berger, 1962; Feshbach, 1982; Hoffman, 1978), it is clear that under some circumstances, people experience fear as a direct response to the fear expressed by others. Many frightening films seem to stress characters' expressions of fear in response to dangers as much as the perceptual cues associated with the threat itself (see Wilson & Cantor, 1985).

Another indirect mechanism that may be proposed to account for emotional responses to the experiences of others derives from the fact that witnessing other people risk danger can produce the "vicarious" experience of fear, even when the persons at risk do not express fear. Zillmann and Cantor (1977) showed that people respond with dysphoria to the misfortunes of characters for whom they have affection or for whom they at least do not feel antipathy. Therefore, fear may be seen as deriving from the anticipation of empathy with the distress responses of liked characters. Both survey and experimental findings indicate that the threat of harm to human or animal protagonists is a common source of mediated-induced fear (e.g., Cantor, 1998; Cantor & Omdahl, 1991).

**Factors Affecting the Tendency to Respond Emotionally to Mediated Stimuli**

Three factors are proposed to have an impact on viewers' tendencies to respond emotionally to mediated fear-evoking stimuli: (a) the similarity of the depicted stimuli to real-life fear-evokers, (b) viewers' motivations for media exposure, and (c) factors affecting emotionality, generally.

**Similarity of Depicted Stimuli to Real-Life Fear-Evokers.** The notion of stimulus generalization implies that the greater the similarity between a conditioned or unconditioned stimulus and the substitute stimulus, the stronger the generalization response will be. Perceptually speaking, realistic depictions of threatening events are more similar to events occurring in the real world than are animated or stylized depictions of the same events. Thus, the stimulus generalization notion would predict more intense responses to live-action violence than to cartoon violence or violence between puppets, for example. Experimental findings are consistent with this expectation (e.g., Gunter & Furnham, 1984).

The similarity of depicted stimuli to those stimuli that provoke fear in a particular individual should also enhance stimulus generalization. Experiments have shown that an individual's fears (for example, of spiders and of death) and prior experiences with stressful events (such as childbirth) intensify the emotional effects of related media presentations (e.g., Sapolsky & Zillmann, 1978; Weiss, Katkin, & Rubin, 1968).
The theory of stimulus generalization, although helpful, cannot account for all situations in which viewers respond with fear to media presentations. The theory also includes the notion of stimulus discrimination, which implies that as viewers come to recognize the different reinforcement contingencies associated with viewing a frightening stimulus on screen as opposed to being exposed to it in real life, their emotional reactions should diminish greatly. Because even adolescents and adults, who understand the mediated nature of frightening images, often experience intense media-induced fright reactions, it is necessary to invoke additional factors to explain their responses.

**Motivations for Media Exposure.** One set of factors that the stimulus generalization notion does not take into account are motivations for media exposure. In order to enhance the emotional impact of a drama, viewers may, for example, adopt the "willing suspension of disbelief" by cognitively minimizing the effect of knowledge that the events are mediated. In addition, mature viewers may enhance their emotional responses by generating their own emotion-evoking visual images or by cognitively elaborating on the implications of the portrayed events. Mature viewers who seek to avoid intense arousal may employ other appraisal processes to diminish fright reactions to media stimuli by using the "adult discount," for example (see Dysinger & Rucknick, 1933), and concentrating on the fact that the stimuli are only mediated. Although such appraisal processes often operate, they are by no means universally effective. Moreover, such processes are especially limited in young children (Cantor & Wilson, 1984).

In addition to seeking entertainment, viewers may expose themselves to media for purposes of acquiring information. Because part of the emotional response to such stimuli might arise from viewers' anticipations of future consequences to themselves, depictions of real threats should evoke more fear than dramatic portrayals of events that could never happen. Moreover, depicted threatening agents that are considered to be proximate or imminent should evoke more fear than remote threats. Support for this notion comes from anecdotes regarding the especially intense reactions to *Jaws*, a movie about shark attacks, by people who saw the movie while vacationing at the seashore. Similarly, in an experiment (Cantor & Hoffner, 1990), children who thought that the threatening agent depicted in a movie existed in their environment were more frightened by the movie than were children who did not believe that the threat could be found in their local area.

**Factors Affecting Emotionality Generally.** Because physiological arousal is an important component of fear, it is a critical element in viewers' reactions to frightening media. Experiments testing the role of excita-
Fright reactions to mass media transfer (e.g., Zillmann, 1978) in responses to emotion-evoking films have demonstrated that excitatory residues from prior arousing experiences can combine with responses to unrelated, subsequently presented movie scenes and thereby intensify emotional reactions to the movie (e.g., Zillmann, Mody, & Cantor, 1974).

This reasoning leads to the expectation that factors within a frightening presentation that tend to produce arousal may combine with the depiction of fear-evoking stimuli to increase the viewer's arousal and thus the intensity of the fear experienced while viewing. Producers of frightening movies employ a variety of stylistic devices, including music and suspense, to intensify the audience's fright (see, e.g., Björkqvist & Lagerspetz, 1985; Cantor, Ziemke, & Sparks, 1984).

DEVELOPMENTAL DIFFERENCES AND MEDIA-INDUCED FEAR

A large body of research has examined two major developmental issues in fright reactions to media: (a) the types of mass media stimuli and events that frighten children at different ages, and (b) the strategies for preventing or reducing unwanted fear reactions that are most effective for differently aged children. Experiments and surveys have been conducted to test expectations based on theories and findings in cognitive development research. The experiments have had the advantage of testing rigorously controlled variations in program content and viewing conditions, using a combination of self-reports, physiological responses, the coding of facial expressions of emotion, and behavioral measures. For ethical reasons, only small excerpts from relatively mild stimuli are used in experiments. In contrast, the surveys have investigated the responses of children who were exposed to a particular mass media offering in their natural environment, without any researcher intervention. Although less tightly controlled, the surveys permit the study of responses to much more intensely frightening media fare.

Developmental Differences in the Media Stimuli That Produce Fright

One might expect that as children get older, they become less and less susceptible to all media-produced emotional disturbances. However, this is not the case. As children mature cognitively, some things become less likely to disturb them, whereas other things become potentially more upsetting. This generalization is consistent with developmental differences in children's fears in general. According to a variety of studies using diverse methodologies, children from approximately 3 to 8 years of age are frightened primarily by animals; the dark; supernatural beings, such as
as ghosts, monsters, and witches; and by anything that looks strange or moves suddenly. The fears of 9- to 12-year-olds are more often related to personal injury and physical destruction and the injury and death of family members. Adolescents continue to fear personal injury and physical destruction, but school fears and social fears arise at this age, as do fears regarding political, economic, and global issues (see Cantor, Wilson, & Hoffner, 1986, for a review). The findings regarding the media stimuli that frighten children at different ages are consistent with observed changes in children’s fears in general.

**Perceptual Dependence.** The first generalization about fright-provoking stimuli is that the relative importance of the immediately perceptible components of a fear-inducing media stimulus decreases as a child’s age increases. Research on cognitive development indicates that, in general, very young children react to stimuli predominantly in terms of their perceptible characteristics and that with increasing maturity, they respond more and more to the conceptual aspects of stimuli (see Flavell, 1963; Melkman, Tversky, & Baratz, 1981). Research findings support the generalization that preschool children (approximately 3 to 5 years old) are more likely to be frightened by something that looks scary but is actually harmless than by something that looks attractive but is actually harmful; for older elementary schoolchildren (approximately 9 to 11 years), appearance carries much less weight, relative to the behavior or destructive potential of a character, animal, or object.

One set of data that supports this generalization comes from a survey conducted in 1981 (Cantor & Sparks, 1984) asking parents to name the programs and films that had frightened their children the most. In this survey, parents of preschool children most often mentioned offerings with grotesque-looking, unreal characters, such as the television series *The Incredible Hulk* and the feature film *The Wizard of Oz*; parents of older elementary school children more often mentioned programs or movies (like *The Amityville Horror*) that involved threats without a strong visual component and that required a good deal of imagination to comprehend. Sparks (1986) replicated this study, using children’s self-reports rather than parents’ observations, and obtained similar findings. Both surveys included controls for possible differences in exposure patterns in the different age groups.

A second investigation that supports this generalization was a laboratory study involving an episode of *The Incredible Hulk* (Sparks & Cantor, 1986). In the 1981 survey of parents, this program had spontaneously been mentioned by 40% of the parents of preschoolers as a show that had scared their child (Cantor & Sparks, 1984). The laboratory study concluded that preschool children’s unexpectedly intense reactions to this program were partially due to their overresponse to the visual image of...
the Hulk character. When participants were shown a shortened episode of the program and were asked how they had felt during different scenes, preschool children reported the most fear after the attractive, mild-mannered hero was transformed into the monstrous-looking Hulk. Older elementary schoolchildren, in contrast, reported the least fear at this time, because they understood that the Hulk was really the benevolent hero in another physical form and that he was using his superhuman powers to rescue a character who was in danger.

Another study (Hoffner & Cantor, 1985) tested the effect of appearance more directly by creating a story in four versions, so that a major character was either attractive and grandmotherly looking or ugly and grotesque. The character's appearance was factorially varied with her behavior—she was depicted as behaving either kindly or cruelly. In judging how nice or mean the character was and in predicting what she would do in the subsequent scene, preschool children were more influenced than older children (6-7 and 9-10 years) by the character's looks and less influenced than older children by her kind or cruel behavior. As the age of the child increased, the character's looks became less important and her behavior carried increasing weight. A follow-up experiment revealed that all age groups engaged in physical appearance stereotyping in the absence of information about the character's behavior.

Harrison and Cantor's (1999) retrospective study of fright responses also provided evidence in support of the diminishing influence of appearance. When descriptions of the program or movie that had frightened respondents were categorized as whether they involved immediately perceptible stimuli (e.g., monstrous-looking characters, eerie noises), the percentage of respondents whose described scene fell into this category declined as the respondent's age at exposure increased.

**Fantasy vs. Reality as Fear Inducers.** A second generalization that emerges from research is that as children mature, they become more responsive to realistic and less responsive to fantastic dangers depicted in the media. The data on trends in children's fears suggest that very young children are more likely than older children and adolescents to fear things that are not real, in the sense that their occurrence in the real world is impossible (e.g., monsters). The development of more "mature" fears seems to presuppose the acquisition of knowledge regarding the objective dangers posed by different situations. One important component of this knowledge includes an understanding of the distinction between reality and fantasy, a competence that develops only gradually throughout childhood (see Flavell, 1963; Morison & Gardner, 1978).

This generalization is supported by Cantor and Sparks' (1984) survey of parents. In general, the tendency to mention fantasy offerings, depicting events that could not possibly occur in the real world, as sources of
fear decreased as the child's age increased, and the tendency to mention fictional offerings, depicting events that could possibly occur, increased. Again, Sparks (1986) replicated these findings using children's self-reports. Further support for this generalization comes from a study of children's fright responses to television news (Cantor & Nathanson, 1996). A random survey of parents of children in kindergarten, second, fourth, and sixth grades showed that fear produced by fantasy programs decreased as the child's grade increased, whereas fear induced by news stories increased with age. Valkenburg, Cantor, and Peeters (2000), in a random survey of Dutch children, also found a decrease between the ages of 7 and 12 in fright responses to fantasy content.

Responses to Abstract Threats. The third generalization from research is that as children mature, they become frightened by media depictions involving increasingly abstract concepts. This generalization is clearly consistent with the general sources of children's fears, cited earlier. It is also consistent with theories of cognitive development (e.g., Flavell, 1963), which indicate that the ability to think abstractly emerges relatively late in cognitive development.

Data supporting this generalization come from a survey of children's responses to the television movie The Day After, which depicted the devastation of a Kansas community by a nuclear attack (Cantor et al., 1986). In a random telephone survey of parents, conducted the night after the broadcast of this movie, children under 12 were reportedly much less disturbed by the film than were teenagers, and parents were the most disturbed. The very youngest children seem to have been the least frightened. The findings seem to be due to the fact that the emotional impact of the film comes from the contemplation of the potential annihilation of the earth as we know it—a concept that is beyond the grasp of the young child. The visual depictions of injury in the movie were quite mild compared to what most children have become used to seeing on television.

A study of children's reactions to television coverage of the war in the Persian Gulf also supports the generalization that, as they mature, children are increasingly responsive to abstract as opposed to concrete aspects of frightening media (Cantor, Mares, & Oliver, 1993). In a random survey of parents of children in public school in Madison, Wisconsin, conducted shortly after the Gulf War, there were no significant differences between 1st, 4th, 7th, and 11th graders in the prevalence or intensity of negative emotional reactions to television coverage of the war. However, children in different grades were upset by different aspects of the coverage. Parents of younger children, but not of adolescents, stressed the visual aspects of the coverage and the direct, concrete consequences of combat (e.g., the missiles exploding) in their descriptions of the elements
that had disturbed their child the most. As the child’s age increased, the more abstract, conceptual aspects of the coverage (e.g., the possibility of the conflict spreading) were cited by parents as the most disturbing.

Developmental Differences in the Effectiveness of Coping Strategies

Research in cognitive development has also been used to determine the best ways to help children cope with fear-producing stimuli or to reduce their children’s fear reactions once they occur (Cantor, 1998; Cantor & Wilson, 1988). Developmental differences in children’s information-processing abilities yield differences in the effectiveness of strategies to prevent or reduce their media-induced fears. The findings of research on coping strategies can be summed up in the following generalization: In general, preschool children benefit more from “noncognitive” than from “cognitive” strategies; both cognitive and noncognitive strategies can be effective for older elementary schoolchildren, although this age group tends to prefer cognitive strategies.

Noncognitive Strategies. Noncognitive strategies are those that do not involve the processing of verbal information and that appear to be relatively automatic. The process of visual desensitization, or gradual exposure to threatening images in a nonthreatening context, is one such strategy that has been shown to be effective for both preschool and older elementary schoolchildren. In several experiments, prior exposure to filmed footage of snakes (Wilson & Cantor, 1987), still photographs of worms (Weiss, Imrich, & Wilson, 1993), rubber replicas of spiders (Wilson, 1987), and live lizards (Wilson, 1989a) reduced children’s fear in response to movie scenes featuring similar creatures. Also, fear reactions to the Hulk character in The Incredible Hulk were reduced by exposure to footage of Lou Ferrigno, the actor who plays the character, having his makeup applied so that he gradually took on the menacing appearance of the character (Cantor, Sparks, & Hoffner, 1988). None of these experiments revealed developmental differences in the effectiveness of desensitization techniques.

Other noncognitive strategies involve physical activities, such as clinging to an attachment object or having something to eat or drink. Although these techniques are available to viewers of all ages, younger children consider them to be more effective and report using them more often than older children do. In a study of children’s perceptions of the effectiveness of strategies for coping with media-induced fright, preschool children’s evaluations of “holding onto a blanket or a toy” and “getting something to eat or drink” were significantly more positive than those of older elementary schoolchildren (Wilson et al., 1987). Harrison and Cantor’s (1999)
Another retrospective study also showed that the percent of respondents who reported having used a "behavioral" (noncognitive) coping strategy to deal with media-induced fear declined as age at exposure to the frightening fare increased.

Another noncognitive strategy that has been shown to have more appeal and more effectiveness for younger than for older children is covering one's eyes during frightening portions of a presentation. In an experiment by Wilson (1989b), when covering the eyes was suggested as an option, younger children used this strategy more often than older children did. Moreover, the suggestion of this option reduced the fear of younger children, but actually increased the fear of older children. Wilson noted that the older children recognized the limited effectiveness of covering their eyes (while still being exposed to the audio features of the program) and may have reacted by feeling less in control, and therefore more vulnerable, when this strategy was offered to them.

Cognitive Strategies. In contrast to noncognitive strategies, cognitive (or "verbal") strategies involve verbal information that is used to cast the threat in a different light. These strategies involve relatively complex cognitive operations, and research consistently finds such strategies to be more effective for older than for younger children.

When dealing with fantasy depictions, the most typical cognitive strategy seems to be to provide an explanation focusing on the unreality of the situation. This strategy should be especially difficult for preschool children, who do not have a full grasp of the implications of the fantasy-reality distinction. In an experiment by Cantor and Wilson (1984), older elementary schoolchildren who were told to remember that what they were seeing in The Wizard of Oz was not real showed less fear than their classmates who received no instructions. The same instructions did not help preschoolers, however. A study by Wilson and Weiss (1991) also showed developmental differences in the effectiveness of reality-related strategies.

Children's beliefs about the effectiveness of focusing on the unreality of the stimulus have been shown to be consistent with these experimental findings. In Wilson et al.'s (1987) study of perceptions of fear-reducing techniques, preschool children's ranking of the effectiveness of "tell yourself it's not real" was significantly lower than that of older elementary schoolchildren.

For media depictions involving realistic threats, the most prevalent cognitive strategy seems to be to provide an explanation that minimizes the perceived severity of the depicted danger. This type of strategy is not only more effective with older children than with younger children, in certain situations it has been shown to have a fear-enhancing rather than anxiety-reducing effect with younger children. In an experiment involv-
ing the snake-pit scene from *Raiders of the Lost Ark* (Wilson & Cantor, 1987), children were either exposed or not exposed to reassuring information about snakes (e.g., the statement that most snakes are not poisonous). Although this information tended to reduce the fear of older elementary schoolchildren, kindergarten and first-grade children seem to have only partially understood the information, responding to the word *poisonous* more intensely than to the word *not*. For them, negative emotional reactions were more prevalent if they had heard the supposedly reassuring information than if they had not heard it.

Data also indicate that older children use cognitive coping strategies more frequently than preschool children do. In the survey of reactions to *The Day After* (Cantor et al., 1986), parents' reports that their child had discussed the movie with them after viewing it increased with the age of the child. In a laboratory experiment involving exposure to a scary scene (Hoffner & Cantor, 1990), significantly more 9- to 11-year-olds than 5- to 7-year-olds reported spontaneously employing cognitive coping strategies (thinking about the expected happy outcome or thinking about the fact that what was happening was not real). Finally, Harrison and Cantor's (1999) retrospective study showed that the tendency to employ a cognitive strategy to cope with media-induced fear increased with the respondent's age at the time of the incident.

Studies have also shown that the effectiveness of cognitive strategies for young children can be improved by providing visual demonstrations of verbal explanations (Cantor et al., 1988) and by encouraging repeated rehearsal of simplified, reassuring information (Wilson, 1987).

### GENDER ISSUES AND MEDIA-INDUCED FRIGHT

#### Gender Differences in Media-Induced Fear

There is a common stereotype that girls are more easily frightened than boys (Birnbaum & Croll, 1954), and indeed that females in general are more emotional than males (e.g., Fabes & Martin, 1991; Grossman & Wood, 1993). There is quite a bit of research that would seem to support this contention, although the gender differences may be less strong than they appear at first glance. Moreover, the observed gender differences seem to be partially attributable to socialization pressures on girls to express their fears and on boys to inhibit them.

Peck (1999) conducted a meta-analysis of the studies of media-induced fear that were produced between 1987 and 1996. Her analysis, which included 59 studies that permitted a comparison between males and females, reported a moderate gender-difference effect size (.41), with
females exhibiting more fear than males. Females’ responses were more intense than those of males for all dependent measures. However, the effect sizes were largest for self-report and behavioral measures (those that are under the most conscious control) and smallest for heart rate and facial expressions. In addition, the effect size for gender differences increased with age.

Peck (1999) also conducted an experiment in which male and female college students were exposed to two scenes from the Nightmare on Elm Street series of movies, one featuring a male victim and the other featuring a female victim. She found that women’s self-reports of fear were more intense than those of males, especially when the victim was female. However, when the victim was male, certain of the responses (pulse amplitude and hemispheric asymmetry) suggested that men were experiencing more intense physiological reactions than women.

Although more research is needed to explore the extent of gender differences in media-induced fear and the factors that contribute to them, these findings suggest that the size of the gender difference may be partially a function of social pressures to conform to gender-appropriate behavior.

Gender Differences in Coping Strategies

There is some evidence of gender differences in the coping strategies used to counteract media-induced fear, and these gender differences may also reflect gender role socialization pressures. Hoffner (1995) found that adolescent girls reported using more noncognitive coping strategies than boys did, but that there were no gender differences in the use of cognitive strategies. Similarly Valkenburg et al. (2000) found that among 7- to 12-year-old Dutch children, girls reported resorting to social support, physical intervention, and escape more often than boys did, but that there was no gender difference in the use of cognitive reassurance as a coping strategy.

Both of these findings are consistent with Hoffner’s (1995) explanation that because boys are less willing than girls to show their emotions, they avoid noncognitive strategies, which are usually apparent to others. In contrast, the two genders employ cognitive strategies with equal frequency because these strategies are less readily observable.

SUMMARY AND CONCLUSIONS

In summary, research shows that children often experience anxiety and distress while watching mass media presentations and that these feelings, in varying intensities, often linger after exposure. Recent surveys demon-
strate that media-induced fears often interfere with children's sleep, and retrospective reports suggest that the negative effects of scary media can endure for years, even into adulthood.

Research on the relationship between cognitive development and emotional responses to television has been very helpful in predicting the types of television programs and movies that are more or less likely to frighten children of different ages and in devising effective intervention and coping strategies for different age groups. In addition to providing empirical tests of the relationship between cognitive development and affective responses, these developmental findings can help parents and other caregivers make more sensible viewing choices for children (Cantor, 1998).

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REFERENCES

11. FRIGHT REACTIONS TO MASS MEDIA


