

Tales from the Screen: Enduring Fright Reactions to Scary Media

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Introduction

On October 31, 1992, a program called *Ghostwatch* aired on British television. Four months later, two 10-year-old boys who had viewed the program were referred to Gulson Hospital in Coventry, where they were treated for persistent anxiety. Simons and Silveira (1994) reported that the more severely affected of the two boys required a hospital stay of eight weeks. According to his physicians, he exhibited extreme anxiety in reaction to the program:

(The child) had been frightened by *Ghostwatch* and had refused to watch the ending. He subsequently expressed fear of ghosts, witches, and the dark, constantly talking about them and seeking reassurance. He suffered panic attacks, refused to go upstairs alone, and slept with the bedroom light on. He had nightmares and daytime flashbacks and banged his head to remove thoughts of ghosts. He became increasingly clingy and was reluctant to go to school or to allow his mother to go out without him (p. 389).

This case of enduring fright caused by a media presentation is obviously extreme, but how many more children have had similar reactions that went unnoticed by psychiatrists? A number of researchers have studied the effects of frightening media, yet most have focused on short-term fright effects such as immediate symptoms that end quickly after exposure. Cantor and associates (for reviews see Cantor, 1994; Cantor, 1998; Cantor & Wilson, 1988) have developed a program of research focusing on children's fright reactions to both realistic and fantastic media content. Most of their research has centered on factors that enhance or reduce children's immediate fright reactions.

Although few researchers have measured persistent fright effects after a substantial time lag such as weeks, months, or years, anecdotal reports of long-term fright effects are plentiful. Witness the friend who saw Alfred Hitchcock's *Psycho* 25 years ago and still cannot shower without keeping

an eye on the bathroom door, or the colleague who saw *Jaws* twenty years ago and cannot swim in the ocean to this day. In our research, we have collected many anecdotal reports of recurring nightmares featuring characters and creatures straight from television programs or films that the dreamer saw as a child.

Beyond anecdotal evidence, however, there are few studies examining lingering fright effects to media stimuli. Sparks (1989) found that half of the females and one-quarter of the males in his sample reported enduring fright effects after viewing scary media. Sparks, Spirek, and Hodgson (1993) measured specific enduring fright reactions including persistent nervousness, trouble sleeping, avoidance of scary movies, and fear of going into certain rooms in the home. Females were again more likely to report enduring fright effects than males: Females' prevalence rates ranged from 48% for avoidance of movies to 68% for fear of going into certain rooms, whereas males' prevalence rates ranged from 10% for fear of going into certain rooms to 43% for nervousness after viewing.

Corroborating the findings of Sparks et al. (1993), regarding the types of enduring fright effects children experience, are data from a study by Cantor and Nathanson (1996), who analyzed a random sample of parents' reports of their children's fright reactions to news. Although their 1993 article focused specifically on news, Cantor and Nathanson took additional measures of fright reactions to media in general. These data revealed that 43.2% of the 285 parents in the sample who were asked an open-ended question about their children's fright reactions reported that their children had experienced intense fright induced by the mass media. Moreover, 46.3% of those who had observed such reactions reported that the affected child experienced trouble sleeping (e.g., nightmares, refusing to sleep alone, or inability to sleep), 20.3% reported that the child seemed to be mentally preoccupied with the stimulus (e.g., talking about it a lot and asking repeated questions), and 18.7% observed the child crying or screaming. Although such immediate and enduring effects are not as extreme as the example we cite at the beginning of this article, they are still severe enough to be observed by an appreciable number of parents, and are therefore worthy of concern and further investigation.

Our study was thus designed to explore enduring fright reactions to media content in more detail. Our goals were to categorize the types of media stimuli responsible for these effects, to explore the range of symptoms that make up these reactions, and to examine developmental trends in both the types of stimuli that are most frightening to children of different ages, and the coping strategies they find most effective. To accomplish these goals, we asked a convenience sample of college students from two Midwestern universities to report their "tales from the screen," that is, enduring fright reactions they have had to television programs or movies.

Categorizing Frightening Stimuli and Fright Symptoms

Cantor (1994) has argued that the connection between scary media content and viewer fright can be explained in part through the principle of stimulus generalization. According to this principle, if a real-life stimulus evokes a particular emotional response, media depicting the same stimulus will evoke a similar though less intense response. For instance, if a real-life stimulus like blood evokes an anxiety reaction, a bloody scene on television should evoke a similar but less intense reaction.

Because this principle led us to expect that fright reactions to mass media would be based on depictions of stimuli and events that produce fright in the real world, we looked to the psychiatric literature for a typology of real-world fright-producing stimuli. The framework we chose came from the Specific Phobia section of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychiatric Association, 1994). The defining feature of specific phobia is "a marked and persistent fear of clearly discernible, circumscribed objects or situations" ([DSM-IV, p. 405](#)). The DSM-IV framework splits phobia-producing stimuli into five classes: animal (such as dogs and spiders); environmental (such as fires and floods); blood/injection/injury (such as wounds or needles); situational (such as heights, enclosed spaces, or more circumscribed spaces like doctors' offices); and "other" (objectively innocuous yet disturbing stimuli such as distorted faces or loud noises). For people diagnosed with specific phobia, exposure to these stimuli results in an immediate anxiety response characterized by a variety of panic-related physiological and psychological symptoms.

In analyzing our participants' reports of prior fright reactions to media, we categorized the stimuli they wrote about in terms of the five types of stimuli related to specific phobia and the different symptoms that have been observed to result from them. The stimulus types and symptom types are discussed in detail in the Methods section. We were also interested in any lingering attitudinal and behavioral effects of viewing that lasted beyond the immediate fright symptoms. Finally, we took measures of sex, age at exposure, characteristics of the exposure situation, coping strategies used, and preference for various media genres to see how these variables affected fright reactions to scary media.

Research Questions

We devised four research questions to guide our analyses of the duration of fright effects, the range of fright symptoms reported, the usefulness of the DSM-IV stimulus categories for describing the frightening stimuli, and the usefulness of these stimulus categories and viewing-situation variables in predicting specific effects and duration of effects.

RQ1: How prevalent and long-lasting are media-induced fright reactions in a sample of college undergraduates?

RQ2: What is the range of symptoms reported?

RQ3: How closely do the media stimuli that evoke fright responses correspond with the five fright-provoking stimulus types described in the DSM-IV?

RQ4: Which aspects of the viewing situation and types of stimuli predict enduring effects?

We also advanced two hypotheses based on developmental theory and research on the types of stimuli children of different ages find most frightening, and the types of coping strategies they find most effective. Guided by Piagetian principles holding that children become less dependent on the immediately perceptible attributes of stimuli with age, Cantor and associates have demonstrated that pre-operational children (up to seven years) are likely to be frightened by readily perceived yet not necessarily realistic threats such as loud noises and monstrous characters, whereas concrete operational children (approximately eight to 12 years old) are more likely to be frightened by realistic yet abstract threats such as disease and nuclear war. Research has demonstrated that pre-school children are more likely to be frightened by something that looks scary, independent of its realism or capacity to produce harm, and that older children are more frightened by realistic, objectively threatening stimuli (Cantor & Sparks, 1984; Hoffner & Cantor, 1985; Cantor, 1994). Moreover, older children are adept at using thoughts such as "it's not real" to distract themselves cognitively and cope with their fright. Younger children, in contrast, rely more heavily on behavioral strategies that distract them mechanically, like hugging a pillow or getting something to eat. Research has demonstrated that pre-school children are more likely than older children to benefit from behavioral coping strategies when frightened, and that older children more often use cognitive strategies (Cantor & Wilson, 1988).

H1: Fright reactions to concrete stimuli such as scary animals, disturbing sounds and distorted images, and blood will be most frequently reported by participants who were very young at exposure, and less frequently reported by those older at exposure.

H2: Behavioral coping efforts will be most frequently reported by participants who were very young at exposure, whereas cognitive coping efforts will be most frequently reported by those older at exposure.

Method

Participants

Our sample consisted of undergraduate students from two large Midwestern universities. One hundred three students in an introductory public speaking course at the University of Wisconsin-Madison were given the opportunity to receive extra credit by filling out a questionnaire about their fright responses to a mass media presentation. Students were told explicitly that they would receive extra credit even if they indicated that they had never had such a reaction. Ninety-six of 103 wrote extensive responses. Their average age was 20.5, and the majority were female (77.1%). Of the seven students who reported no fright reactions to media, six were male. Fifty-three additional students in an introductory mass communication course at the University of Michigan followed procedures identical to those used at Wisconsin. Forty-two out of 50 wrote extensive responses. Their average age was 20.8, and 75.4% were female. Six of the eight who reported no fright reactions were male. At both universities, males were also less likely to agree to participate in the study in the first place. This trend for men to be less likely to report enduring fright effects is consistent with the findings of Sparks (1989).

Together the sub samples represent a range of socio-economic status, from lower-middle to upper class. Although ethnicity was not measured in the questionnaire, the classes that participants were sampled from were representative of their respective universities, whose enrolments are approximately 80% white. All analyses that follow are based on the total sample size, $N = 138$.

Materials

Participants took home a questionnaire that began with an open-ended item asking them to describe an especially frightening media experience. The instructions were as follows:

Have you ever seen a television show or movie that frightened or disturbed you so much that the emotional effect endured after the program or movie was over?

This questionnaire asks about any such experience you may have had. The first part asks you to describe this incident in your own words. Please describe the program or film, the situation, and your response as you remember them. Approximately 3/4 to one page, double-spaced, is the

expected length. If you have never had the experience of intense and enduring fright caused by mass media, please indicate so below.

Participants were then told that after they had completed their own description they should open Part II (a sealed questionnaire) and respond to the questions inside. They were also told that if they had never had such an experience, they should neither write the paper nor complete Part II, and they would still receive extra credit. The questions in Part II measured details of the frightening program or movie as well as the situation in which it was viewed, and participants' physiological, cognitive, and emotional responses. Participants were also asked to report their sex, how old they were when they had the experience, and how long the effects lasted.

Coding.

Coding was done on the basis of both the open-ended description (Part I) and the structured questionnaire (Part II). Responses were coded for immediate symptoms, enduring effects, duration of effects, stimulus types, and coping strategies.

Immediate symptoms.

Responses were coded for the presence of physiological and psychological reactions that the DSM-IV lists as characteristic of the panic attacks that often accompany phobic anxiety. According to the DSM-IV, the following reactions may be observed in a person experiencing an intense fright reaction to a noxious stimulus: increased heart rate, sweating, trembling, shortness of breath, choking, chest pain, nausea, dizziness/faintness, a feeling of unreality, fear of losing control, fear of dying, numbness, chills/fever, crying, tantrums, freezing in place, and clinging. The first 13 symptoms are outlined in the DSM-IV's section on panic attacks (p. 395). The last four symptoms are often observed in children experiencing specific phobic anxiety (p. 410). People experiencing intense fright rarely display all of the symptoms described above, though they may display any combination of them.

Enduring effects.

The type of effect reported by participants was coded to determine the extent to which participants' daily lives were affected by the exposure. Categories for type of effect included (1) altered normal behavior such as sleep or eating, (2) avoidance or dread of the depicted situation, (3) avoidance or dread of other, related situations, (4) avoidance or dread of similar movies or programs, and (5) obsessive thinking or talking about the frightening stimulus. In addition, any attitude change brought about by exposure to the stimulus was coded as negative (avoiding or disliking something related to the stimulus) or positive (seeking out or liking something related to the stimulus).

Duration of effects.

We also coded the reported duration of fright effects to differentiate shorter-term reactions from longer-term reactions. The coding scheme was structured as an ordinal variable with nine possible values. The categories for length of effect were (0) no residual effect after viewing, (1) ending within a few hours after viewing, (2) more than a few hours but less than one day, (3) one day to less than one week, (4) one week to less than one month, (5) one month to less than six months, (6) six months to less than one year, (7) one year or more but terminated at the time of measurement, and (8) one year or more and still in effect at the time of measurement.

Stimulus types.

The aspects of the film or television program reported as frightening by participants were coded according to the five categories proposed by the DSM-IV: animal, environmental, blood/injection/injury, situational, and "other." The animal type included animals, reptiles, insects, animal-like aliens, and the like. The natural environment type included phenomena such as storms, heights, water, earthquakes, fire, nuclear holocaust, and other environmental threats. The blood-injection-injury type included blood, gore, injury, pain, and other physical threats to living things. The situational type included specific situations such as elevators, bridges, flying, enclosure in small spaces, and circumscribed situations like doctors' offices. The "other" type included idiosyncratic stimuli such as loud or eerie noises, costumed characters, threats of disease or germs, and specific objects. In our sample, the "other" type consisted almost completely of references to disturbing noises and monstrous-looking characters; thus, we renamed this type the "disturbing sounds/distorted images" type to more accurately define it for this study. Categories were not regarded as mutually exclusive; a single report could contain references to any combination of them.

Coping strategies.

Coping strategies were coded as behavioral or cognitive, with any combination of the two possible. Behavioral strategies were defined as actions not involving verbalizations or thought processes, with the purpose of distracting attention away from the noxious stimulus. Eating, leaving the room, covering the eyes, or hugging a pillow are examples of behavioral coping strategies. Cognitive strategies were defined as verbalizations or thought patterns used to cast the stimulus in a less threatening light. Reassuring oneself that "it's just a movie" or "this could never happen in real life" are examples of cognitive coping strategies.

Two independent coders coded the same randomly selected 15% of the reports to determine intercoder reliability. Kappa values ranged from .78 to 1.00 for the complete set of variables, with perfect intercoder agreement for most variables.¹

Viewing situation and media preferences.

Participants indicated where they viewed the program or movie in question, why they viewed it, the time of day they viewed it, and whether they viewed it alone or with someone else. Enjoyment of various media genres was measured with scales ranging from zero ("do not enjoy them at all") to ten ("enjoy them tremendously"). These genres included romantic comedy, horror, science fiction, music video, and murder mystery.

Results

Prevalence and Duration of Fright Effects

The first research question asked how prevalent and long-lasting fright reactions to media presentations would be in our sample. The fact that 138 out of 153 participants filled out detailed reports of media-induced fright experiences demonstrates that such experiences were prevalent in our sample, and participants were quite willing to write about them even though they would have received credit for simply writing the word "no." Moreover, participants were required to report only one experience; they may have had several other experiences that went unreported. ² The experience reported by each participant may have been chosen because it was the most extreme, the most accessible, or the most recent, or because the cognitive stage they were at during exposure impeded memory of early-life experiences. Indeed, there appears to be a recency effect, with 6% of the sample reporting incidents that occurred before the age of eight, 38% between eight and 12, and 56% over 12. It is likely that more of these experiences did in fact occur at younger ages, but these earlier experiences were not reported as frequently as more recent ones.

Participants were asked what effect their experience had and how long it lasted. About one-sixth (16.7%) reported effects lasting less than one day, 15.9% reported a duration of one day to less than one week, 15.2% reported a duration of one week to less than one month, 8.7% reported a duration of one month to less than six months, 4.3% reported a duration of six months to less than one year, 9.4% reported a duration of one year or more but terminated, and 26.1% reported that the effects of the media presentation had lasted at least one year and were still persisting at the time of measurement. Only 3.5% of participants claimed that there was no residual effect after viewing. Over half (52.2%) of the sample reported disturbances in normal behavior such as sleeping or eating, 35.5% avoided or dreaded the depicted situation, 18.1% avoided or dreaded other situations related to the depicted situation (such as avoiding freshwater lakes after viewing *Jaws*), 17.4% avoided or dreaded similar movies or

television programs, and 22.5% reported subsequent mental preoccupation with the frightening aspects of the stimulus.

When asked if their attitudes had been affected by the experience, 50% of participants reported a negative attitude change (increased dislike or avoidance of something related to the presentation), 38.4% reported no attitude change, and 10.9% reported a positive attitude change (increased liking or appreciation of something related to the presentation). Examples of positive attitude change were increased appreciation for the plight of AIDS victims and renewed commitment to help disadvantaged others.

Range of Symptoms

The second research question asked what the range of reported symptoms would be. Of the 17 types of anxiety symptoms coded, three (choking, chest pain, and tantrums) were not reported. The 14 remaining symptoms were reported in the following order of frequency: 26.8% of participants reported crying or screaming, 23.9% trembling or shaking, 20.3% nausea or stomach pain, 18.1% clinging to a companion, 18.1% increased heart rate, 17.4% freezing or a feeling of paralysis, 10.9% fear of losing control, 6.5% sweating, 6.5% chills or fever, 5.8% fear of dying, 4.3% shortness of breath, 3.6% feeling of unreality, 2.2% dizziness or faintness, and 0.7% (one person) reported numbness. The majority (81.9%) of participants reported at least one of the above symptoms. It appears, then, that the physical and emotional fright reactions our sample experienced in reaction to media stimuli are very similar to those typically experienced in reaction to real-life stimuli, a finding that is consistent with the principle of stimulus generalization.

Categorization of Stimuli

The third research question asked whether the five types of frightening stimuli associated with phobic reactions in the DSM-IV could be used to categorize the stimuli reported in our sample. Almost all of the reports (97.8%) contained references to at least one of the five types of frightening stimuli described in the DSM-IV. The most frequently reported type (65.2%) was blood/injection/injury, exemplified by the following reference to the film *Jaws*:

I don't think it was the shark or the actual deaths that frightened me, it was the blood. For about two months after the movie I had nightmares about blood. The nightmares didn't always involve sharks, but always contained gross amounts of blood. To this day I remain horrified of blood...

Although this excerpt refers to an animal, the stimulus that provoked fright in the viewer was the blood associated with the shark's attacks.

The second most common type (60.1%) was disturbing sounds/distorted images, exemplified in the following report of the film *Halloween*:

I woke up in the middle of the night because I heard the heavy breathing that I associated with the killer in the film. I was very scared and went into my parents' bedroom. I then realized that the noise I was hearing was my dad's snoring. Even after finding this out, I was still scared...

In this excerpt, the viewer is most frightened by the breathing sounds of the killer. Ominous sounds seemed to be especially disturbing; several participants claimed the film *Jaws* was particularly frightening, not because of the shark or the blood but because of the film's suspenseful music which served to signal the approach of the shark.

References to the situational stimulus type appeared in 33.3% of the reports. The following excerpt from a report about the film *DeadRingers* illustrates how the situation of a doctor's visit has been forever altered for one viewer:

This movie was about twin gynecologists that shared a practice. One of them started taking drugs and would come to work under the influence of drugs and give pelvic exams to women using homemade metal tools or instruments that were extremely large and it caused a lot of pain for the women... Being a female, having to take a pelvic exam in the future and thinking of nothing but that movie... Going to the doctor is never going to be the same.

The animal type was reported by 11.6% of participants. The following example, also a reference to *Jaws*, exemplifies the animal type because the fright-provoking stimulus in this case was the shark:

I had fun watching (the shark), but I was surprised at the effect it had on me when I went swimming in Wisconsin lakes... If someone yelled "Jaws!" and I was in the water my heart would start racing and I would fly out of the water. It lasted a good year.

The following passage from the televised nuclear holocaust film *The Day After* refers to the environmental type, which was reported by 9.4% of participants. Although the environmental type in the DSM-IV refers to fire and tornadoes and other actual natural phenomena that threaten to harm people, we surmised that nuclear war qualified as a hypothetical environmental threat, especially in the 1980s:

It was a show about the effects of a nuclear war...I was, needless to say, completely terrified and obsessed with the

idea that the world would soon come to an end. I had horrifying nightmares and experienced stomach pains to the point where my mother had to take me to the doctor. Still, however, I can feel the terror I had for those couple of weeks.

In summary, all five of the scary stimulus types outlined in the DSM-IV were represented in the reports. In many cases, participants reported more than one of these elements in the same film or program.

Situational Predictors of Effects and Duration

The fourth research question asked which situational variables would predict enduring fright effects. To understand the impact of different viewing situations, it is useful to know what kinds of viewing situations were experienced by participants.

The average age of exposure to the frightening movie or program was 14.4 years. When asked where they viewed it, 31.2% of participants reported viewing in a theater, 31.2% on video, 21.0% on broadcast television, and 15.2% on cable. Most (52.9%) were watching during the evening, while 30.4% viewed late at night and 13.0% viewed in the afternoon. When asked why they viewed, only 32.6% said they sought out the movie or program. Most reported watching because someone else wanted to watch (44.2%) or because they "stumbled onto it" (12.3%). The majority of participants saw the presentation in the company of someone else (83.3%).

Considering sex and age at exposure to be part of the exposure situation, we first asked whether these demographic variables affected duration of fright effects. We recognized that participants' age at the time of reporting would be confounded with duration of effect, such that younger ages at exposure would have a greater chance of being associated with longer-lasting effects. Therefore, in multiple linear regression analyses using sex and age at exposure to predict duration of effects, age at reporting was entered on the first step to control its influence. Sex was not a significant predictor of duration but age at exposure was, such that the younger participants were at exposure, the longer-lasting were the effects ($\beta = -.29, p < .001$).

Considering the type of media content to be part of the exposure situation as well, we then asked which stimulus types would predict enduring effects. To answer this question, we first conducted logistic regression analyses using the five stimulus types to predict four enduring fright effects: normal behaviors disrupted, depicted situation avoided, other related situations avoided, and obsessive thoughts about the stimulus. In each of these analyses, sex and age at exposure were entered first to control their influence. None of the stimulus types independently predicted disruption of normal behaviors or obsessive thoughts.

Blood/injection/injury themes ($Wald(1, 137) = 7.74, p < .01$) and situational themes ($Wald(1, 137) = 7.91, p < .01$) both predicted avoidance of the depicted situation, and animal themes ($Wald(1, 137) = 4.28, p < .05$) predicted avoidance of related situations, such as going to the zoo or petting a neighbor's dog. This finding is consistent with Wilson and Cantor's (1987) research showing that children exposed to a scary snake scene from the film *Raiders of the Lost Ark* avoided handling a live snake afterward.

To examine the relationship between stimulus types and duration of effects, multiple regression analyses were conducted, again with sex and age at exposure controlled. The only stimulus type to independently predict duration of effect was blood/injection/injury, $\beta = .17, p < .05$. In other words, only the presence of a blood/injection/injury theme was associated with longer-lasting effects; the presence of other themes was unrelated to duration of effect.

We also point out that preference for thrilling media genres such as murder mysteries and science fiction did nothing to alleviate fright effects or lessen their duration. Preference for such genres was unrelated to duration, and even appeared to worsen some enduring effects. Logistic regression analyses showed that liking of mysteries ($Wald(1, 136) = 4.96, p < .05$) and liking of science fiction ($Wald(1, 136) = 4.62, p < .05$) both positively predicted avoidance of the depicted situation, although liking of horror *negatively* predicted avoidance of the depicted situation, $Wald(1, 136) = 4.90, p < .05$. Liking for science fiction also predicted obsessive thoughts about the film or program, $Wald(1, 136) = 5.25, p < .05$. Our data therefore provide little support for the popular notion that children who like thrilling media genres will be better able to handle their effects than children who do not like them, although it appears that children who like horror may actually seek out the situations depicted in the films or shows that scare them.

Our final research question asked which aspects of the viewing environment would predict duration of effect. ANOVA models were constructed to examine the relationship between viewing-environment variables and duration of effect. The viewing-environment variables of interest were when the program was seen, where it was seen, with whom it was seen, and why it was seen. The first three variables bore no relationship to duration of effect; that is, it did not matter whether participants saw the program during the day or at night, whether they saw it in a theater or on television, or whether they saw it alone or with others. What did matter was *why* they saw the program, $F(3, 126) = 2.94, p < .05$. With duration of effect defined as an ordinal variable with values ranging from 0 (no effect beyond the program's end) to 8 (effect lasting more than a year, still continuing), a post-hoc Tukey test showed that the average duration of effect for participants who viewed because someone

else was watching or wanted to watch the program (M = 4.51) was significantly higher ($p < .05$) than the duration for those who sought out the program themselves (M = 3.24).

To summarize, it appears that younger children, children exposed to media presentations depicting blood and injury, and children who did not intend to view but went along with others' decisions to do so were most at risk for experiencing enduring fright effects.

Developmental Hypotheses

Fright-provoking stimuli.

The first hypothesis proposed that participants who were youngest at exposure would be most likely to report fright in response to concrete stimuli such as animals, disturbing sounds and distorted images, and blood. Table 1 displays percentages of reports referencing each of the five stimulus types, for each of three age groups, 0-7 (preoperational), 8-12 (concrete operational), and 13 and over.

Percentage of Reports Referencing Each of Two Coping Strategies, by Age at Exposure				
			Age at Exposure	
Stimulus type	Chi-Square (df=2)	0 to 7	8 to 12	13 and over
Animal	14.1***	37.5%	21.6%	3.8%
Sounds/Images	14.0***	87.50	76.5	46.8
Blood/Injection/Injury	10.6***	12.50	70.6	67.1
Environmental	0.9	0%	9.8	10.1
Situational	4.3	25.00	23.5	40.5
<i>Note. For both analyses, N = 137. *p < .05. **p < .01.</i>				

As predicted, animal and disturbing sounds/distorted images stimulus types were most frequently reported by participants who were younger at exposure, and were less frequently reported by those older at exposure. Contrary to our expectations, the blood/injection/injury type was reported most by the older groups.

Coping strategies.

The second hypothesis proposed that behavioral coping strategies would be favored by those exposed at younger ages, whereas cognitive coping strategies would be used more by participants who were older at exposure. Of the 103 (75.2%) participants who reported using a coping strategy to deal with their fright reactions, 71.8% used at least one behavioral strategy, and 57.3% used at least one cognitive strategy. Table 2 displays the percentages in each age group reporting the use of each strategy.

Percentage of Reports Referencing Each of Two Coping Strategies, by Age at Exposure				
			Age at Exposure	
Stimulus type	Chi-Square (df=2)	0 to 7	8 to 12	13 and over
Behavioral	11.2**	87.5%	66.7%	42.3%
Cognitive	5.9*	12.5	39.2	48.7

*Note. For both analyses, N = 137. *p < .05. **p < .01.*

As predicted, the younger groups favored behavioral strategies, and cognitive strategies were used most by the older groups. The oldest group relied upon both strategies approximately equally, suggesting that they did not entirely give up behavioral strategies as they added cognitive strategies.

Discussion

In our sample, enduring fright effects caused by exposure to frightening media appear to have been quite prevalent, with 90.2% reporting such effects. This may not be surprising, but the proportion of participants--one in four--who reported fright effects that they were still experiencing indicates that these responses should be of major concern. These effects were more serious than jumpiness at a slammed door or the need to use a nightlight; they ranged from an inability to sleep through the night for months after exposure to steadfast and continuing avoidance of the situations portrayed in the programs and movies. These enduring effects are perhaps to be expected given the intense physical and emotional symptoms participants reported experiencing, the same types of symptoms experienced in real-life encounters with threatening stimuli. Such effects are not only a nuisance to parents, but a burden to children trying to cope with fears that are often irrational and unnecessarily intense. On the positive side, some participants reported a positive attitude change

resulting from the presentation, such as commitment to learn more about the Holocaust or the conviction to become a marine biologist, but these participants were clearly in the minority. For most participants, the experience was negative.

The types of stimuli reported corresponded closely to the five types of fright-provoking stimuli outlined in the DSM-IV. It appears that the kinds of stimuli that provoke intense fright reactions in real life (whether or not these reactions are justified based on the objective threat of the stimulus) are by and large the same stimuli that provoke intense fright reactions to films and television. The most frequently referenced stimulus type was blood/injection/injury. It is unclear whether this type was mentioned most frequently because it is inherently more frightening than the other types, because it is the most common stimulus type in the mass media, or because for some reason it is recalled more easily. In any case, the ubiquity of blood and gore in the U.S. media should be cause for concern regarding its potential for causing enduring fright reactions in children.

Of equal concern is the fright-provoking power of the "other" category, which consisted of disturbing sounds and distorted images. Such stimuli are frequently production effects which have been added to a film to increase its power to fascinate and arouse. Whether sound effects or computer-generated images, production effects represent a category of media stimuli that provoke intense fright reactions yet in many cases do not exist in real life. Moreover, the subsequent occurrence of something resembling the production effect in real life (e.g., snoring that sounds like a killer's amplified breathing) may elicit an inappropriate fear response. Because as adults we want to teach children to avoid bodily harm, there is obviously some redeeming value in scary but realistic media threats such as vicious animals, kidnappers, and tornadoes; however, there is little redeeming value in fantastic film stimuli that frighten unnecessarily.

It appears that the type of viewing situation preceding the most enduring fright effects involved young viewers witnessing depictions of blood and injury in programs they did not seek out themselves. The enduring fright reactions reported in this study were therefore not the product of strange or unusual viewing circumstances. Considering the abundance of graphically violent content in movies and on premium cable television channels (Wilson et al, 1998), as well as the tendency for younger family members to go along with older members' media choices (mainly because their lack of status in the family forces them to do so), it is not surprising that enduring fright effects from scary media were prevalent in our sample.

Given the abundance of fantastic images, sounds, and scenes used to enrich the sensory appeal of media presentations, our findings suggest that very young children may be especially at risk for persistent anxiety caused by movies and television. Although scary sounds, distorted images, and animals as media stimuli were reported most by participants who were

very young at exposure, blood and gore stimuli were not. While it seems appropriate to assume that blood and injury are concrete stimuli like sounds, monstrous faces, and animals, there may be other reasons why older children are more disturbed by blood and gore than younger children. Blood in the water after a shark attack, for example, may appear to a young child as innocuous as Kool-Aid spilled in a swimming pool. Older children are more likely to know what that red liquid means, and imagine the injury that preceded the bloodshed even if they did not witness it. Also, life experiences such as learning to ride a bicycle may have taught older children to associate visible blood with pain and injury, while younger children have not yet acquired the memories of personal injury that would lead them to react empathically to a character's injury. Finally, younger children do not have the role-taking skills that are considered necessary for true empathy to occur (see Wilson & Cantor, 1985).

Fortunately, regardless of what frightened them as children, our participants seemed to know which coping strategies worked best for them, with those youngest at exposure reporting a heavy reliance on behavioral as opposed to cognitive strategies. Those older at exposure still reported using behavioral strategies, even though they also relied upon cognitive strategies. It appears that people may never outgrow the need to clutch a pillow (or a companion) when they become frightened. Many adults have learned to recognize the types of stimuli that frighten them and can choose movies and programs carefully to avoid such content. Given that very young children may not yet know what types of stimuli frighten them most, nor do they enjoy the power to choose which media the family will view, they are in special need of protection from exposure to such scary stimuli before coping strategies are necessary.

As with other types of serious stress, the younger the child is when encountering a stressful situation, the longer the effects of the stress may last. The reason for this effect is open to debate. According to theories of developmental psychology (e.g., Erikson, 1980), violations of the earliest assumptions a child needs to form as an individual within a social world are often the hardest to remedy. Erikson observed that very young children who acquire the impression that the world is a threatening place tend to remain easily threatened and anxious as adults. Therefore, it is reasonable to recommend that we pay closer attention to the potential media stimuli may have for creating long-lasting fears of the surrounding world, fears that can interfere with normal functioning. Given that the normal functioning of children is an essential goal of childrearing, parents should be aware of the types of media that may contribute to enduring fright effects in their children.

Limitations and Future Directions

Our goal was not to make claims about the prevalence of fright reactions in the general population, but researchers wishing to extend our research in that direction would benefit from obtaining a sample reflecting a range of ages and socioeconomic statuses. Moreover, although the college classes we sampled from consisted of relatively equal proportions of males and females, females were more likely to agree to take part in the study and to affirm that they had experienced enduring fright caused by the mass media. This was the case at both universities. Twelve of the 15 participants who claimed to have no such experience were male, and the majority of students who declined the invitation to take part in the study were also male, indicating either an unwillingness to report fright experiences or some sort of immunity to such experiences. Although we did not find sex differences among those who did report fright effects, it may prove interesting to investigate differences between males who agree to report fright effects and those who do not.

Moreover, by asking participants to list only one media-related fright reaction, we may have inadvertently created a sample of mostly "fresh" reports, since recent experiences may be more accessible than earlier experiences even if they did not have as great an impact. We asked respondents to write about only one fright experience because we wanted to obtain detailed reports without exhausting them. The findings of this detailed study may be complemented by less detailed research in which participants are asked to briefly describe one experience from each of several stages of their lives.

Retrospective reports such as those used in this study are sometimes criticized because they form a relatively weak basis for making causal inferences. Nonetheless, we chose to use the method of retrospective self-reporting for two reasons. First, we view this method not as a limitation but as an ethical necessity. It would be impossible to expose individuals to frightening stimuli with the intent of inducing long-term, life-affecting fright reactions while still maintaining standards for the ethical treatment of human subjects. Despite its potential limitations, the analysis of retrospective self-reports is an ethical and informative way to begin investigating the important relationship between exposure to frightening media stimuli and enduring fright effects. The next step, of course, is longitudinal research.

Our second reason for using retrospective self-reports deals with their validity as measures of actual events. We understand that retrospective self-reports are open to criticism on the grounds that memory of early events may be limited or altered by the passage of time, psychopathological conditions, cognitive development, or mood at the time of recall. However, we believe that dismissing the retrospective self-report as a valuable source of data would amount to throwing the baby out with the bathwater. In a compelling article assessing the reliability of

retrospective self-reports, Brewin, Andrews, and Gotlib (1993) argued that "adults asked to recall salient factual details of their own childhoods are generally accurate, especially concerning experiences that fulfill the criteria of having been unique, consequential, and unexpected" (p. 87). Based on their review of dozens of articles employing retrospective self-report measures, these authors concluded that when people are questioned about specific events that occurred late enough in life to remember at all (i.e., after infancy), the central features of the accounts they provide are largely accurate. Perhaps more importantly for the purposes of our study, Brewin and associates contend that "because the influences on memory serve mainly to inhibit recall or disclosure, it seems fair to conclude that reports confirming events should be given more weight than negative reports" (p. 94). Because the present study is based on retrospective self-reports of only those elements of a frightening media experience that can be recalled, our sample of reports should be relatively free of fabricated or misrecalled information.

Comparing our convenience sample of reports to Cantor and Nathanson's (1996) random sample of parental reports further validates our data. Whereas 26.8% of our participants reported crying or screaming, 18.7% of the parents reported their child crying or screaming. Whereas 52.2% of our participants reported trouble with normal behaviors such as eating or sleeping, 46.3% of the parents reported their child's trouble sleeping. Whereas 22.5% of our participants reported subsequent mental preoccupation, 20.3% of the parents reported their child's obsessive talking about the stimulus. These percentages are strikingly similar. The fact that a random sample of parents and two convenience samples of college students reported the same types of reactions with similar frequencies lends credence to our claims that these effects are real and generally accurate.

Future research on fright reactions to scary media could extend our findings by including specific measures, such as a symptom checklist, to more thoroughly tap participants' memories of their experiences. In addition, careful content analyses of stimulus materials could help further identify the production effects such as lighting, computer-generated images, and sound effects, that contribute to enduring fright reactions. The inclusion of personality and life-experience measures might also be useful for determining who is most at risk for enduring anxiety as a result of media exposure, and to what type of content. The research of Sparks et al. (1993) showed that individual differences in arousability predict duration of emotional effects after exposure to a scary film. Identifying a wider range of person-centered variables related to enduring fright reactions to media will be essential if we intend to learn how to protect children from the potential emotional threats of media exposure.

Notes

1. Kappas for each variable were as follows:

Immediate symptoms: increased heart rate (1.00); sweating (1.00); trembling (.95); shortness of breath (1.00); choking (1.00); chest pain (1.00); nausea (1.00); dizziness (1.00); feeling of unreality (.89); fear of losing control (.84); fear of dying (1.00); numbness (.87); chills and/or fever (1.00); crying (1.00); tantrums (1.00); freezing into place (.96); clinging (1.00).

Enduring effects: altered normal behavior such as eating or sleeping (1.00); avoidance or dread of the depicted situation (.98); avoidance or dread of other, related situations (.78); avoidance or dread of similar movies or programs (1.00); obsessive thinking or talking about the stimulus (.90); attitude change (1.00).

Duration of effects: reported duration (1.00).

Stimulus types: animal (1.00); natural environmental (1.00); blood/injection/injury (1.00); situational (.93); "other: disturbing sounds or distorted images" (.90).

Coping strategies: behavioral (1.00); cognitive (.98).

2. Cantor and Sparks (1984), for instance, reported that more than half of their sample named at least two programs or movies that had significant fright effects, and one-third named at least three.

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