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Some Immediate Effects of Televised Violence on Children's Behavior[1]

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The hypothesis that exposure to televised violence would increase the willingness of children to hurt another child was investigated. Boys and girls of two age groups (5–6 and 8–9 years) first viewed excerpts from actual television programs depicting either aggresive or nonaggressive scenes, and were then provided with an opportunity to aggress against a peer. All subjects were subsequently placed in a free play situation and the frequency of their aggressive responses observed. Results indicated that children exposed to the aggressive program engaged in longer attacks against an ostensible child victim than subjects exposed to the nonaggressive program. The aggressive program also elicited a higher level of aggressive play than the nonaggressive one, particularly among the younger boys.

In his review of the social and scientific issues surrounding the portrayal of violence in the mass media, Larsen (1968) noted that we may begin with two facts: "(1) Mass media content is heavily saturated with violence, and (2) people are spending more and more time in exposure to such content [p. 115]." This state of affairs has been used by both laymen and professionals as the basis for appeals to modify the entertainment fare to which viewers, particularly children and adolescents, are exposed (Merriam, 1964; Walters, 1966; Walters & Thomas, 1963; Wertham, 1966). Other writers, however, have argued that the kind of violence found on television or in movies does not necessarily influence observers' "real-life" social behavior (Halloran, 1964; Klapper, 1968). A few have even characterized the portrayal of violence as potentially preventing the overt expression of aggression, at least under some circumstances (Feshbach, 1961; Feshbach & Singer, 1971).

In view of the controversy, it is hardly surprising that recent years have seen a substantial increase in the number of experimental studies directed to this issue. An effort has been made to determine whether children will learn and/or be disinhibited in their performance of aggressive acts as a function of exposure to symbolic aggressive models (e.g., in cartoons, movies, stories, and simulated television programs). This research has indicated consistently that children may indeed *acquire,* from even a very brief period of observation, certain motoric and verbal behaviors which are associated with aggression in life situations. More specifically, it has been repeatedly shown that after viewing a film which depicts novel forms of hitting, kicking, and verbal abuse, children can, when asked to do so, demonstrate this learning by reproducing these previously unfamiliar behaviors with a remarkable degree of fidelity (Bandura, 1965; Hicks, 1965). Taken together with the large body of research on the observational learning of other behaviors (Flanders, 1968), the available evidence appears to leave little

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doubt that the learning of at least some aggressive responses can and does result from television or movie viewing.

Equally important, however, is the question of whether the observation of violence will influence children's performance of aggressive acts when they have *not* been specifically asked to show what they have seen or learned. Several experiments appear to provide evidence relating to this issue (Bandura, Ross, & Ross, 1961, 1963a, 1963b; Rosekrans & Hartup, 1967). In these studies, subjects have typically been exposed to live or filmed aggressive scenes, then placed in a free play situation with a variety of toys or other play materials. Results obtained with these procedures have shown repeatedly that the exposure of young children to aggression produces increments in such play activities as punching inflated plastic clowns, popping balloons, striking stuffed animals, and operating mechanized "hitting dolls."

It has been argued by critics (Klapper, 1968) that findings such as those reviewed above are not directly relevant to the question of whether exposure to televised aggression will increase children's willingness to engage in behavior which might actually harm another person. Since this criticism was advanced, a human victim has replaced the inanimate target in at least four more recent investigations (Hanratty, 1969; Hanratty, Liebert, Morris, & Fernandez, 1969; Hanratty, O'Neal, & Sulzer, 1972; Savitsky, Rogers, Izard, & Liebert, 1971). These later studies have demonstrated clearly that exposure to the behavior of filmed aggressive models may lead young children to directly imitate aggression against a human, as well as a "toy," victim.

Despite the newer evidence, critics may still question whether exposure to the type of violence generally depicted on regularly broadcast television shows will produce similar effects. Likewise, it is important to consider the possible *disinhibitory* effects (cf. Lovaas, 1961; Siegel, 1956) rather than only the direct *imitative* effects of observing aggressive models. Although such effects have previously been observed with adult subjects and violent scenes taken from motion pictures (e.g., Berkowitz, 1965; Berkowitz & Rawlings, 1963; Walters & Thomas, 1963), in no previous investigation known to the authors has the influence of televised violence on interpersonal aggression been examined for young children. It was with these latter questions that the present research was primarily concerned. We sought to determine whether exposure to violent scenes taken directly from nationally telecast programs increases the willingness of young children to engage in aggressive acts directed toward another child.

Method

Participants

Population sampled. The sample was drawn both from Yellow Springs, Ohio, a small college town, and from a larger and more conservative neighboring community, Xenia. The participants were brought to Fels Research Institute in Yellow Springs by one of their parents, in response to a newspaper advertisement and/or a letter distributed in local public elementary schools asking for volunteers to participate in a study of the effects of television on children. To assure that no potential participants were turned away because of scheduling inconveniences, parents were invited to select their own appointment times (including evenings or weekends), and transportation was offered to those who could not provide it for themselves.

Subjects. The subjects were 136 children, 68 boys and 68 girls. Sixty-five of the participants were 5 or 6 years of age at the time of the study; the remaining 71 subjects were 8 or 9 years of age. Within each age group and sex the children were assigned randomly to the treatment conditions. Approximately 20% of the children in this study were black; virtually all of the remainder were white. The economic backgrounds from which these participants came was widely varied. Although economic characteristics were not used as a basis for assignment to treatments, inspection suggested that the procedure of random assignment had adequately distributed them among the experimental groups.

Experimental personnel. One of the investigators greeted the parent and child at the outset, served as the interviewer, and obtained informed parental consent for the child's participation. A 28-year-old white female served as experimenter for all the children, and two other adult females served as unseen observers throughout the experiment.

Design

A 2 × 2 × 2 factorial design was employed. The three factors were sex, age (5–6 or 8–9 years old), and treatment (observation of aggressive or nonaggressive television sequences).

Procedure

Introduction to the situation. Upon the arrival of parent and child at the institute, the child was escorted to a waiting room containing nonaggressive magazines and other play materials while the parent was interviewed in a separate room. During the interview, the nature of the experiment was disclosed to the parent, questions were invited and answered, and a written consent to the child's participation was obtained.[3]

Experimental and control treatment. After the interview, but without permitting the parent and the child to interact, the experimenter escorted each subject individually to a second waiting room containing children's furniture and a television video-tape monitor. The television was then turned on by the experimenter, who suggested that the child watch for a few minutes until she was ready for him. The experimenter left the child to watch television alone for approximately 6½ minutes; the subjects were in fact continuously observed through a concealed camera and video monitor. For all groups, the first 120 seconds of viewing consisted of two 1-minute commercials video-taped during early 1970. The first of these depicted the effectiveness of a certain paper towel, and the second advertised a humorous movie (rated G). The commercials were selected for their humor and attention-getting characteristics.

Thereafter, children in the experimental group observed the first 3½ minutes of a program from a popular television series, "The Untouchables." The sequence, which preserved a simple story line, contained a chase, two fist-fighting scenes, two shootings, and a knifing. In contrast, children in the control group viewed a highly active 3½-minute video-taped sports sequence in which athletes competed in hurdle races, high jumps, and the like. For all subjects, the final 60 seconds of the program contained a commercial for automobile tires. Before the end of this last commercial, the experimenter reentered the room and announced that she was ready to begin.

Assessment of willingness to hurt another child. The subject was next escorted by the experimenter from the television room to a second room and seated at a response box apparatus modeled after the one employed by Mallick and McCandless (1966). The gray metal response box, which measured approximately 17 × 6 inches, displayed a red button on the left, a green button on the right, and a white light centered above these two manipulanda. The word "hurt" appeared beneath the red button, while the word "help" appeared beneath the green button. Several plastic wires led from the response box to a vent in the wall. The experimenter explained to the subject that these wires were connected to a game in an adjacent room and that "one of the other children is in the next room right now and will start to play the game in just a minute." She further explained that the game required the player in the other room to turn a handle and that the white light would come on each time the other child in the next room started to turn the handle, thus activating the red and green buttons.

The experimenter continued:

> When this white light comes on, you have to push one of these two buttons. If you push this green button, that will make the handle next door easier to turn and will help the child to win the game. If you push this red button, that will make the handle next door feel hot. That will hurt the child, and he will have to let go of the handle. Remember, this is the *help* button, and this is the *hurt* button [indicating]. See, it says *help* and *hurt*. . . . You have to push one of these two buttons each time the light goes on, but you can push whichever one you want to. You can always push the same button or you can change from one button to the other whenever you want to, but just remember, each time the light goes on, you can push only one. So if you push this green button then you help the other child and if you push this red button then you hurt the other child. Now if you push this green button for *just a second,* then you *help the other child just a little,* and if you push this red button down for *just a second,* then you *hurt the other child just a little.* But if you push this green button down a little longer, then you help the other child a little more, and if you push this red button down a little longer, then you hurt the other child a little more. *The longer you push the green button, the more you help the other child* and *the longer you push the red button, the more you hurt the other child.*

This explanation, with slightly varied wording, was repeated a second time if the child did not indicate comprehension of the instructions. After being assured that the subject understood the task, the experimenter left the room.[4]

[3] Since no specific information could be provided in public announcements or over the telephone, it appeared necessary to have parents accompany their children to the institute in order to assure that no child participated without the informed consent of his parents. In order to defray the costs of transportation, baby sitters for siblings who remained at home, and the like, and to eliminate economic biases which might otherwise have appeared in the sample, a $10 stipend was given the parent of each participant. No parent who appeared for the interview declined to allow his or her child to participate.

[4] Nine children, all in the 5–6-year-old age group, were terminated prior to the collection of data because they refused to remain alone, cried, or left the experimental situation. Twenty-three other children participated in the entire experiment but were not included in the sample. Of these, 14 (5 in the younger age group and 9 in the

Although all the subjects were led to believe that other children were participating, there was, in fact, no other child; the entire procedure was controlled in the next room so as to produce 20 trials, with an intertrial interval of approximately 15 seconds. Each child's response to each trial (appearance of the white light) and the duration of the response, recorded to the hundredth of a second, was automatically registered. When the subject had completed 20 trials, the experimenter reentered the room and announced that the game was over.

Assessment of aggressive play. The influence of televised violence on the children's subsequent play activities was also explored, although this issue was of secondary interest in the present research (the study being primarily concerned with interpersonal aggression rather than aggression aimed at inanimate objects). After completing the button-pushing task, the child was escorted to a third room (designated the "play room") across the hallway. The room contained two large tables, on each of which appeared three attractive nonaggressive toys (e.g., a slinky, a cookset, a spacestation) and one aggressive toy (a gun or a knife). Two inflated plastic dolls, 36 inches and 42 inches in height, also stood in the room. The child was told that he would be left alone for a few minutes and that he could play freely with any of the toys.

All the children were observed through a one-way vision mirror, and their aggressive behavior was recorded using a time-sampling procedure. One point was scored for the occurrence of each of three predetermined categories of aggressive play (playing with the knife, playing with the gun, assaulting either of the dolls) during the first 10 seconds of each of ten ½-minute periods. In order to assess interobserver reliability for this measure, 10 subjects were observed independently by the two observers. Their agreement using the scoring procedures was virtually perfect ($r = .99$).

At the end of the play period, the experimenter reentered the room and asked the child to recall both the television program which he had seen and the nature of the game he had played. (All children included in the analyses were able to recall correctly the operation of the red and green buttons and the essential content of the television programs to which they had been exposed.) The child was then escorted to the lounge where the parent was waiting, thanked for his or her participation, rewarded with a small prize, and asked not to discuss the experiment with his or her friends.

older group) did not understand or follow instructions for the response box; 7 (3 younger and 4 older children) played or explored the room instead of watching television. The data for the remaining 2 children were not recorded properly due to the technical difficulties. All potential participants brought to the institute by their parents who were not eliminated for the reasons listed above were included in the experimental sample.

Results

Willingness to Hurt Another Child

The single overall measure which appears to capture the greatest amount of information in this situation is the total duration in seconds of each subject's aggressive responses during the 20 trials. Since marked heterogeneity of variance was apparent among the groups on this measure, the overall $2 \times 2 \times 2$ analysis of variance was performed on square-root transformed scores (i.e., $x' = \sqrt{x} + \sqrt{x+1}$, Winer, 1962). The means for all groups on this measure are presented in Table 1. The analysis itself reveals only one significant effect: that for treatment conditions ($F = 4.16$, $p < .05$). Children who had observed the aggressive program later showed reliably more willingness to engage in interpersonal aggression than those who had observed the neutral program.

Several supplementary analyses, which may serve to clarify the nature of this overall effect, were also computed. For example, a subject's total duration score may be viewed as the product of the number of times he aggresses and the average duration of each of these aggressive responses. Moreover, these two measures are only moderately, although reliably, related in the overall sample ($r = +.30$, $p < .05$). Analysis of variance for the average duration of the hurt responses reveals only a significant program effect that directly parallels the effects for total duration ($F = 3.95$, $p < .05$). The means for all groups on this measure are presented in

TABLE 1

MEAN TOTAL DURATION (TRANSFORMED) OF AGGRESSIVE RESPONSES IN ALL GROUPS

Program shown	5–6-year-olds		8–9-year-olds	
	Boys	Girls	Boys	Girls
Aggressive	9.65	8.98	12.50	8.53
N	15	18	20	17
Nonaggressive	6.86	6.50	8.50	6.27
N	15	17	18	16

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measure which appears st amount of informa- is the total duration in ıbject's aggressive re- 0 trials. Since marked ıriance was apparent this measure, the over- is of variance was per- ot transformed scores $\sqrt{x+1}$, Winer, 1962). roups on this measure e 1. The analysis itself ıificant effect: that for ($F = 4.16$, $p < .05$). bserved the aggressive l reliably more willing- ıterpersonal aggression observed the neutral

ntary analyses, which ıe nature of this overall puted. For example, a n score may be viewed number of times he ag- ge duration of each of onses. Moreover, these v moderately, although e overall sample ($r =$ ysis of variance for the the hurt responses re- ıt program effect that fects for total duration). The means for all sure are presented in

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(TRANSFORMED) OF AG- S IN ALL GROUPS

-olds	8–9-year-olds	
Girls	Boys	Girls
8.98	12.50	8.53
18	20	17
6.50	8.50	6.27
17	18	16

Table 2. In contrast, analysis of the frequency measure fails to show any significant effects, although the tendency for the younger children is in the same direction.

Helping Responses

One possible explanation of the higher total aggression scores shown by the aggressive program group is that these children were simply more aroused than their nonaggressive treatment counterparts. To check on this interpretation, an overall analysis of variance was performed on the total duration of the help responses, employing the same square-root transformation described above. Presumably, if general arousal accounted for the effects of the hurt measure, the aggressive program groups should also show larger help scores than the nonaggressive program groups. However, contrary to the general arousal hypothesis, the effect of the treatments on this measure was not significant; the overall F comparing the aggressive program subjects' prosocial responses with those of the nonaggressive program observers was only 1.17. The one effect of borderline significance which did appear in this analysis was a Program × Sex × Age interaction ($F = 3.91$, $p \cong .05$). As can be seen in Table 3, in which these data are presented, the interaction results from the very large helping responses shown by older girls who saw the aggressive program and the relatively large helping responses shown by younger girls who saw the nonaggressive one.

As a second check on the possibility that

TABLE 2

MEAN AVERAGE DURATIONS (TOTAL DURATION/ NUMBER OF HURT RESPONSES) OF AGGRESSIVE RESPONSES IN ALL GROUPS

Program shown	5–6-year-olds		9–8-year-olds	
	Boys	Girls	Boys	Girls
Aggressive	3.42	2.64	5.18	3.07
Nonaggressive	2.55	2.09	2.07	1.57

Note.—The number of subjects for each cell in this analysis is the same as that shown in Table 1.

TABLE 3

MEAN TOTAL DURATION (TRANSFORMED) OF HELPING RESPONSES IN ALL GROUPS

Program shown	5–6-year-olds		8–9-year-olds	
	Boys	Girls	Boys	Girls
Aggressive	10.81	11.66	11.32	19.97
Nonaggressive	10.76	14.12	11.59	10.69

Note.—The number of subjects for each cell in this analysis is the same as that shown in Table 1.

the longer durations in the aggressive program groups simply reflected a general arousal, a similar analysis was performed on the average duration scores of the help responses. In contrast to the comparable measure for aggressive responses, no significant differences for any of the main effects or interactions appeared on this measure (main effect for treatments, $F = 1.24$) although paralleling the total duration measure, the older girls who saw the aggressive program showed particularly long average durations. Finally, to show from a correlational approach that the overall help and hurt scores were not merely alternate measures of the same phenomenon, the product-moment correlation between the two sets of scores was computed. The resulting r of $-.24$ reflects a weak but significant ($p < .05$, two-tailed) negative relationship. Thus, overall, it appears clear that a specific disinhibition regarding *aggressive* behavior was produced by observing the televised aggression. This cannot be explained as a general arousal effect.

Aggression in the Play Situation

The mean aggressive play scores for all subjects are presented in Table 4. A 2 × 2 × 2 analysis of variance of these data revealed significant main effects for treatment ($F = 8.01$, $df = 1/128$, $p < .01$) and sex ($F = 37.87$, $df = 1/128$, $p < .001$). In addition, the Treatment × Sex ($F = 4.11$, $df = 1/128$, $p < .05$), Treatment × Age ($F = 4.28$, $df = 1/128$, $p < .05$), and Treatment × Sex × Age ($F = 4.68$, $df = 1/128$, $p < .05$) interactions were all sig-

TABLE 4

MEAN NUMBER OF TIME-SAMPLED AGGRESSIVE PLAY RESPONSES IN ALL GROUPS

Program shown	5–6-year-olds		8–9-year-olds	
	Boys	Girls	Boys	Girls
Aggressive	7.13	2.94	5.65	3.00
Nonaggressive	3.33	2.65	5.39	2.63

Note.—The number of subjects for each cell in this analysis is the same as that shown in Table 1.

nificant. As is apparent from inspection of Table 4, these interactions arose from the fact that, although children exposed to the aggressive program tended to show a higher level of aggressive play than children exposed to the nonaggressive one in all simple comparisons, the effect was much greater for the younger boys than for any of the remaining groups.

Discussion

The overall results of the present experiment provide relatively consistent evidence for the view that certain aspects of a child's willingness to aggress may be at least temporarily increased by merely witnessing aggressive television episodes. These findings confirm and extend many earlier reports regarding the effects of symbolically modeled aggression on the subsequent imitative aggressive behavior of young observers toward inanimate objects (e.g., Bandura, Ross, & Ross, 1963a; Hicks, 1965; Rosekrans & Hartup, 1967). Likewise, the present data are in accord with other studies which have shown disinhibition of both young children's aggressive play and older viewers' willingness to shock another person after observing filmed aggressive modeling. As in many earlier studies, subjects exposed to symbolic aggressive models regularly tended to behave more aggressively than control group subjects tested under identical circumstances. Further, the present results emerged despite the brevity of the aggressive sequences (less than 4 minutes), the absence of a strong prior instigation to aggression, the clear availability of an alternative helping response, and the use of nationally broadcast materials rather than specially prepared laboratory films.

The various measures employed, considered together, provide some clarification of the nature of the effects obtained in the overall analysis. The significant effect for the total duration measure appears to stem predominantly from the average duration of the subjects' aggressive responses. In fact, as seen in Table 2, the group means on this measure did not overlap; the *lowest* individual cell mean among those who observed the aggressive program was higher than the *highest* mean among those groups who observed the nonaggressive program.

It should also be recalled that the instructions given to all children emphasized that a brief depression of the hurt button would cause only minimal distress to the other child, while longer depressions would cause increasingly greater discomfort. This fact, coupled with the finding that the overall average duration of such responses was more than 75% longer in the aggressive program group than in the control group, suggests clearly that the primary effect of exposure to the aggressive program was that of reducing subjects' restraints against inflicting severe discomfort on the ostensible peer victim, that is, of increasing the *magnitude* of the hurting response. With the exception of the older girls, this effect was not paralleled by an increment in the corresponding measures of helping; thus it cannot be attributed to simple arousal effects.

It should be noted that the measure of aggressive play responses was obtained after all the subjects had been given an opportunity to help or hurt another child. Thus the observed effects might reflect an interaction between the programs and some aspect of the hurting/helping opportunity rather than the simple influence of the programs themselves. While the present data do not permit us to address the possibility of such interactions directly, it is clear that the obtained results are consistent with earlier studies in which other types of aggressive scenes were used and where there were no such intervening measures.

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marily to determine whether children's willingness to engage in interpersonal aggression would be affected by the viewing of violent televised material. Within the context of the experimental situation and dependent measures employed, it appeared that this was indeed the case. However, it is clear that the occurrence and magnitude of such effects will be influenced by a number of situational and personality variables. It is thus important to examine the antecedents and correlates of such reactions to violence in greater detail. In view of the fact that a child born today will, by the age of 18, have spent more of his life watching television than in any other single activity except sleep (Lesser, 1970), few problems seem more deserving of attention.

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