

Imitation of Television Aggression among Maori and European Boys and Girls

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The effects of viewing television aggression on play behaviour was examined among 52 8-year-old Maori and Pakeha boys and girls. The children were shown two videotaped segments, made from filmed sequences of play behaviour among male children, who were otherwise similar to the subjects in age, ethnicity, and socioeconomic status. The aggressive film segment included hitting, shooting (with toy guns), threats, name-calling, and arguing. The non-aggressive film segment showed the same models in active play but not engaged in any aggressive behaviour. After viewing each videotaped segment the subjects were allowed 10 minutes free play. During this time their behaviour was videotaped and rated on 15 discrete behaviours. Cluster analyses highlighted two major dimensions among the 15 behaviours. These were labelled *physical aggression* and *activity*. Exposure to either of the filmed segments increased the level of activity in play, but only exposure to the aggressive film increased interpersonal aggression. There were no significant differences, in imitation of aggressive behaviour, between Maori and Pakeha children, or between boys and girls.

The influence of televised aggression on viewers' social behaviour has been documented in great detail. Results from previous research have indicated that exposure to film or television violence usually increases aggressive behaviour (e.g., Andison, 1977; Comstock, 1983; Milavsky, Kessler, Stipp, & Rubens, 1982). Viewing aggressive behaviour facilitates the performance of similar behaviours on the part of viewers, through modelling (observation and imitation) and disinhibition of existing predispositions to aggression (Bandura, 1973; Liebert, Neale, & Davidson, 1973; Murray, 1973). Research on these processes has investigated the effects of intelligence, age, sex, personality, childrearing experiences, parental attitudes and expectations, model characteristics, moods of viewers, and other situational

factors affecting imitation of aggressive models (Andison, 1977; Comstock, 1983; Hartnagel, Teevan, & McIntyre, 1975). However, relatively little attention has been given to ethnic or cultural differences in imitation of aggression. The present study was designed to investigate whether imitation of aggressive behaviour, shown via television, varied among Maori and Pakeha children in New Zealand. In addition, comparisons were made of boys and girls to find out whether previously reported sex differences in the imitation of aggression were evident among New Zealand children.

In New Zealand, conviction rates for violent offending among Maoris are reported to be four times higher than the conviction rate among Pakehas (Schumacher, 1971). Recent statistics indicate that Maoris make up about half of those convicted for violent offences (Department of Statistics, 1986) although they constitute barely 10% of the population.

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Mitchell (1973) has noted that, among ten-year-olds, the Maori/Pakeha conviction rates for criminal offences are 5:1 among boys and 7:1 among girls. Although ethnic differences in convictions for violent offending have been attributed to such factors as a lower socioeconomic status (Oppenheim, 1969), judicial bias and "culture conflict" (McCreary, 1969), some researchers have contended that "cultural influences" may account for some of the ethnic differences (Department of Justice, 1968; Department of Social Welfare, 1973; Metge, 1967; Schumacher, 1971). According to O'Malley "... there is a definite element within traditional Maori culture which emphasises the use of physical force to redress such felt wrongs as a slight to one's own, or one's kin-groups honour" (1973, p. 389). 'Cultural' factors might lead to different rates of aggression either through Maoris being more likely to imitate aggressive models than Pakehas, or simply through Maoris having higher rates of aggressive behaviour, regardless of exposure to aggressive models.

Sex differences in aggressive behaviours have also been reported in previous research. The question arises as to whether such differences are due to boys being more predisposed toward imitative aggression than girls (e.g., Liebert et al., 1973; Eron, Lefkowitz, Huesmann, & Walder, 1972), or whether boys show higher aggression because there are more male than female models who are aggressive.

The specific issues investigated in the present study were whether:

- (a) exposure to televised aggression would increase subsequent aggressive responses among children;
- (b) Maori and Pakeha children differed in rates of aggressive behaviour during free play, prior to viewing aggressive models;
- (c) Maori children were more likely to imitate aggressive models than Pakeha children;
- (d) boys would display more aggressive responses than girls following observation of aggressive male models.

Method

Subjects

The sample consisted of 52 8-year-old children, and contained equal numbers of boys and girls, and Maoris and Pakehas. The subjects were selected from 273 children attending one of four

schools in predominantly lower-middle class areas of Hamilton. Children were selected from the larger group so that they were matched on socioeconomic status (SES) across ethnic group. The selection criteria included: ethnic self-identity (*Maori, Part Maori or Pakeha*), a test of *Maori knowledge* (Archer & Archer, 1971) and a SES based on the children's reports of fathers' and mothers' occupation and educational status. The questionnaires were administered to each child by the classroom teacher. Thirteen boys and 13 girls who identified themselves as Maori were selected. These children all had scores of 4 or more out of 10 on the test of Maori knowledge (Archer & Archer, 1971). A score of four or more indicates some knowledge of Maori culture. Pakeha children were then matched with these children on the basis of the SES ratings. When the sample had been selected, permission was sought from parents for the child to participate at the University in an "experimental television study" involving two short videotapes of children's behaviour. All parents approached gave their permission.

Setting and Procedure

The study was carried out in a campus preschool building and adjacent playground. Several university students were trained as observers and they also acted as child supervisors and interviewers during the data collection procedures. Video cameras and recorders (half-inch black and white) were set up in unobtrusive positions in the preschool building. The stimulus materials were two eight-minute videotape segments, filmed in the same playground where the study took place. One depicted non-aggressive children's play behaviours (e.g., helping, talking, running and cooperative play), while the other showed frequent occurrences of aggressive and anti-social behaviours (e.g., shouting, name-calling, hitting, chasing, bashing, throwing objects and breaking toys). In both segments the models were a mixed group of Maori and Pakeha boys, aged 11 years, and of similar socioeconomic status as the subjects. The amount of aggressive behaviour shown by the Maori and Pakeha models was similar, as were the frequencies they were shown as victims of aggression.

The 52 subjects were divided into eight groups for the participation in the experimental procedures. Four of the groups were ethnically heterogeneous consisting of eight children (four Maori, four Pakeha) and the other four groups each consisted of five children and were ethnically homogeneous (two Maori, two Pakeha). Ethnically mixed and homogeneous groups were used to check whether this factor had any effect of patterns of aggression. No effects were evident in the subsequent data analyses.

When the groups had been selected, appointments were made with the school and one of the groups was picked up by van and brought to the preschool. On arrival, the children were led to the waiting room, where they were met by the student supervisors and interviewers. Each child was given a name tag and asked to play outside in the yard where the toys were. The children's play behaviour was observed through a monitor inside the building that was connected to a TV camera placed unobtrusively in a van, parked on a driveway beside the playground. After five minutes of settling in, the children's play behaviour was recorded for ten minutes. The children were then asked to come inside and watch the videotape segments on a television screen. This viewing was followed by a second play period of 10 minutes, during which time the play behaviours were recorded on videotape. The children were then requested to watch another videotape segment before going out to play again. The process of recording the behaviour on videotape was repeated after the children had viewed the second film. The order of presentation of the films was counter-balanced for the four ethnically heterogeneous groups, with two of the groups being shown the aggressive film first and two the non-aggressive film first. Since no order effects were observed, the procedure followed for the subsequent four groups was to show the non-aggressive segment first, followed by the aggressive segment.

The dependent variables consisted of the behaviours observed during three 10-minute periods of free-play. One play period was prior to the subjects' viewing the film segments, and the others were after viewing the segments. The specific behaviours rated by the observers were chosen because they occurred in one or both the modelled film segments. These behaviours were easy to observe and could be rated with adequate inter-observer reliability. The occurrence of the specified behaviours during each 10-minute free play period was observed and recorded on videotape. Pairs of observers independently counted the number of times each child showed a specific behaviour during each 10-minute play session. The behaviour categories used are shown in Table 1. To establish inter-observer reliability, inter-rater agreement coefficients were calculated for each observed variable (Krippendorff, 1970), yielding a mean reliability coefficient of 0.84, ($p < 0.01$), with a range of 0.74 to 0.98.

Data Analyses

Cluster analyses (McKernell, 1970) were conducted on the 15 behaviour variables. Summed scores over the three play sessions were used. The cluster analyses showed two consistent patterns which were labelled *physical aggression* and

activity. A physical aggression cluster consisted of three behaviours: wrestling/shirt-pulling, kicking, and throwing toys or other objects. All of these behaviours involved interpersonal aggression in that actions were directed towards other children. Intercorrelations among the three variables were .53, .59, and .55. An activity cluster consisted of four behaviours: the amount of time spent running around, the amount of interpersonal verbal communication, the number of children towards whom aggression was shown, and low frequency of help requested from other children. Intercorrelations were between .27 and .53 (-.36 and -.53 for help requested). The 156 (3 conditions by 52 subjects) raw scores for each variable included in the clusters were converted to standardized (stanine) scores, and the variable scores within each cluster were added to form cluster scores for physical aggression and activity (with help requested being reverse scored).

Results

Table 1 shows the mean scores for each observed behaviour variable across the three film exposure conditions. Exposure to either film increased play activities, such as touching, throwing, verbal communication and running, among both Maori and Pakeha children and boys and girls.

Three-way Analyses of Variance (ANOVA) were calculated (film condition x ethnic group x sex; fixed effects model with repeated measures on the film condition factor) with each of the two behavioural dimensions as dependent variables. The results showed a significant main effect on physical aggression for film condition ($F(2, 153) = 49.82, p < .001$), but not for ethnic group or sex (Table 2). There were no significant interactions. Post hoc *t* tests indicated a significant difference on physical aggression between the aggressive and non-aggressive film conditions ($t(51) = 8.20, p < .001$), but no difference between the non-aggressive film and the pre-film play periods. For the activity dimension, there was a significant main effect for film conditions ($F(2, 153) = 124.97, p < .001$), but not for ethnic group or sex, or any of the interactions (Table 3). Children exposed to either of the films increased in level of activity during subsequent play ($t(51) = 14.08, p < .001$ for non-aggressive film and $t(51) = 13.28, p < .001$ for aggressive film), but only exposure to the aggressive film significantly increased the

Table 1: *Mean Behaviour Scores by Film Condition*

Behaviour	Film Condition		
	Pre-Film	Non-Aggress.	Aggressive
1. Hitting or bashing	2.21	5.02	19.65
2. Shooting with water pistol	3.67	28.38	44.71
3. Wrestling and shirt-pulling	1.35	1.37	4.17
4. Kicking	1.38	1.65	5.73
5. Throwing objects	0.87	1.96	4.46
6. Teasing	2.08	11.27	21.92
7. Touching other child	1.52	2.73	5.54
8. Threatening gestures	1.11	2.69	7.94
9. Use of toy weapons	1.70	9.12	12.87
10. Body posture changes	2.50	6.71	13.40
11. Requests for help to other children	1.15	2.38	7.02
12. Name-calling	1.56	8.46	11.40
13. Verbal threats	1.21	3.75	9.00
14. Verbal communications	6.54	28.58	31.31
15. Amount of running	10.10	19.17	26.21

Note. Behaviours 1 to 14 were scored by frequency (no. of acts)
Behaviour 15 was scored by time (no. of seconds)

Table 2: *Mean Behaviour Scores on Physical Aggression*

Condition	Pakeha		Maori	
	Boys	Girls	Boys	Girls
Pre-film				
Mean	12.38	13.92	12.69	11.23
SD	3.67	2.70	2.46	1.72
Non-aggressive film				
Mean	13.77	13.46	13.31	13.15
SD	4.30	3.84	2.52	3.68
Aggressive film				
Mean	18.54	18.00	18.85	17.54
SD	4.01	4.71	3.82	4.67

Note. Scores are summed stanines of individual behaviours

Table 3: *Mean Behaviour Scores on Activity*

Condition	Pakeha		Maori	
	Boys	Girls	Boys	Girls
Pre-film				
Mean	15.58	14.77	15.38	16.23
SD	2.98	2.94	3.08	3.19
Non-aggressive film				
Mean	20.85	21.31	20.92	22.69
SD	3.30	3.45	2.67	3.91
Aggressive film				
Mean	21.85	22.77	21.77	23.53
SD	4.05	3.38	3.77	5.20

Note. Scores are summed stanines of individual behaviours

level of aggressive behaviour. There were no significant sex or ethnic group differences in aggressive behaviour or activity levels.

Further three-way ANOVA's were computed for each of the remaining dependent variables not included in the clusters. Given the use of multiple F and t-tests, the level of significance was set at $p < .001$. The general trend was the significant main effect of the film condition on the following behaviours: hitting/bashing, shooting, touching, threatening gestures, use of weapons, body posture change, name calling and verbal threats (see Table 1). These results were consistent with the previous analyses; exposure to either film had an activating effect on subsequent play behaviour, but exposure to the aggressive film significantly increased aggressive behaviours.

There were only two significant ethnic differences. For verbal threats, Maori children had higher scores ($M=5.24$) than Pakehas ($M=4.06$, $F(1, 50) = 5.80$, $p < .025$). For threatening gestures, Pakeha children had higher scores ($M=4.86$) than Maoris ($M=2.97$; $F(1, 50) = 8.18$, $p < .01$). A marginally significant sex by ethnic group interaction was found for threatening gestures ($F(1, 100) = 4.17$, $p < .05$, and indicated Pakeha boys ($M=1.84$) to be more predisposed towards making non-verbal threats than Maori boys ($M=0.92$) before viewing any film, and after viewing the non-aggressive film (Pakeha $M=4.38$; Maori $M=2.08$) and the aggressive film (Pakeha $M=11.31$; Maori $M=4.85$). The differences between Maori and Pakeha girls on this variable were not significant.

There were two significant sex differences. For verbal threats boys ($M=5.40$) scored higher than girls ($M=3.94$, $F(1, 50) = 9.23$, $p < .005$), and for body posture changes with boys showing more changes ($M=9.24$) than girls ($M=5.83$, $F(1, 50) = 17.98$, $p < .005$).

Discussion

The results demonstrated the effects of viewing televised aggression on the subsequent play behaviour of children. Exposure to the film segments portraying play behaviours increased the level of play activity in children but only exposure to televised

aggression led to a significant increase in interpersonal aggression among children. This finding confirms previous reports that direct imitation of aggressive behaviours by children results from television and movie viewing (Bandura, 1973; Comstock, 1977, 1983; Murray, Rubinstein, & Comstock, 1972). After exposure to televised aggression, the influence of the film models became evident. Children imitated the portrayed behaviours very closely.

There were no significant differences on aggressive behaviour between Maori and Pakeha children, either on overall level of aggression, or on the extent of imitation of aggressive models. These results provide no support for cultural explanations of ethnic differences in aggression. The present research differs from previous comparisons of rates of aggressive behaviour among Maoris and Pakehas in that the subjects in the present study were matched on SES, and because an attempt was made to select Maori children with some knowledge of Maori culture. Given these results, it is clear that no assumptions can be made about cultural differences in aggression between Maoris and Pakehas unless the groups compared are matched on SES, and are shown to differ in cultural background, not just in ethnicity.

Boys did show more aggressive responses than girls following the viewing of the film. This lack of difference in imitative aggression suggests that the sex of the film models may not be very important in mediating the amount of aggressive behaviour among girls. However, it remains to be seen whether different patterns of imitative aggression might be observed after viewing female models. Comstock (1983) reviewed a range of research on sex differences in aggressiveness after exposure to portrayal of violence. He commented that there are few or no sex differences among young children, but such differences become increasingly evident among older children and young adults.

For two of the eight groups, the aggressive film was shown first, followed by the non-aggressive film. Comparison of the levels of aggression with those groups shown the films in the reverse order failed to find an order effect on the children's behaviours. This may indicate that the behaviours imitated were

relatively shortlived. It may also indicate that the films provided powerful modelling stimuli, in that more recent portrayals may have inhibited "incompatible" behaviours arising from the film models viewed earlier. Also, the fact that the two film sequences showed the same models in the same environment, would undoubtedly have highlighted the major difference between the two films — the presence or absence of aggressive behaviours.

In summary, there were clearcut effects resulting from the viewing of televised aggression. Children acquired socially undesirable behaviour after brief exposure to aggressive models. Given the information that children in New Zealand watch television on average for 20 hours each week (Barney, 1973), and that rates of violence on New Zealand television are relatively high (Abbott, 1986; Ginpil, 1976; Haines, 1983), it is a matter of some concern that allowing high levels of media violence may lead to greater levels of aggressive behaviour in the community. There have been recent, clear examples in New Zealand, where children and teenagers have aggressed, such as by setting fire to a school, pouring oil on a busy road, or vandalizing a house, shortly after such behaviours were portrayed explicitly on television. In the United States, it is estimated that the showing of Russian roulette scenes in the film *Deerhunter*, both in cinemas and on television, has led to the deaths of 30 boys and young men who imitated this activity (National Coalition on Television Violence, 1981).

It seems important that more research be directed to the processes facilitating the learning of aggression from specific types of television violence; the kind of conditions that promote the disinhibition effects for antisocial behaviour and the behavioural implications for children who incorporate television norms of violence as their own.

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