

TELEVISION EXPOSURE AND CHILDREN'S AGGRESSIVE BEHAVIOUR

by

LESLEY ANN JOY

B.Sc. (Hons), Southampton University, 1975

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

Department of Psychology

We accept this thesis as conforming  
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

February, 1978

© Lesley Joy, 1978

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the Head of my Department or by his representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of PSYCHOLOGY

The University of British Columbia  
2075 Wesbrook Place  
Vancouver, Canada  
V6T 1W5

Date FEBRUARY 14 th 1978

## ABSTRACT

The impact of television on children's aggressive behaviour was studied longitudinally in the context of a natural experiment. The study was conducted in three small towns in British Columbia, Canada, first in 1973, when one town, Notel, did not yet have television reception, and again in 1975, two years after Notel received one Canadian channel, CBC. In both 1973 and 1975 the second town, Unitel, received CBC, and the third town, Multitel, received CBC and the three major U.S. networks (ABC, CBC, and NBC). The major focus of the study was on the aggressive behaviour displayed by elementary school children at play on the school grounds; physical and verbal aggressive behaviours of 120 children at time 1 and 120 children at time 2 were coded by observers. In addition, teacher and peer ratings of aggressive behaviour and information about television viewing habits were obtained.

The aggressive behaviour of children in Notel increased significantly from 1973 to 1975, whereas, the aggressive behaviour of children in Unitel and Multitel did not change significantly over the same period. The increase in aggressive behaviour observed in Notel children was not restricted merely to children initially high in aggression, as previous researchers have suggested (Stein & Friedrich, 1975).

On the whole, the peer and teacher ratings supported the findings from the observational measures of aggression, and consistent sex differences were found for physical aggression. That is, males were more physically aggressive than females.

The information collected about children's favourite shows revealed

no differences between the aggressive and less aggressive children. In addition, there was no difference among the three towns in the repertoires of aggressive behaviour displayed. The most probable explanation of the increased aggression in Notel children was heightened arousal, resulting from Notel children's lack of familiarity with television. Heightened arousal would result in a greater likelihood of aggression being elicited. Furthermore, because children learn from television that aggression is acceptable, appropriate, and effective, the increase in aggressive behaviour would likely be maintained.

## TABLE OF CONTENTS

	Page
ABSTRACT	ii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	viii
ACKNOWLEDGEMENTS	ix
INTRODUCTION	1
Hypotheses	17
METHOD	21
RESULTS	26
Longitudinal Analyses of Variance	27
1. Physical Aggression	27
2. Verbal Aggression	29
Cross-Sectional Analyses of Variance	33
1. Physical Aggression	34
2. Verbal Aggression	37
Repertoire of Aggressive Behaviour	41
Children High and Low in Aggressive Behaviour	47
Correlations among Measures of Aggression	68
DISCUSSION	73
FOOTNOTES	84
REFERENCES	86
APPENDIX A: Peer Ratings	93
APPENDIX B: Teacher's Ratings	99
APPENDIX C: Children's TV Interview (Notel & Unitel)	100
APPENDIX D: Children's Media Interview (Multitel)	108
APPENDIX E: Aggression Categories	121

## Table of Contents continued

	Page
APPENDIX F: Coding Sheets	123
APPENDIX G: Repertoire of Aggressive Behaviour	127
APPENDIX H: Key: Abbreviations Employed in the Correlation Tables	130
APPENDIX I: Correlation Tables for Teacher Ratings, Peer Ratings, and Observational Measures of Aggression	131
APPENDIX J: Viewing Hours Per Week	139

## LIST OF TABLES

	Page
Table 1. Demographic Data for Notel, Unitel, and Multitel	18
Table 2. Comparison of the Number of Shows (in Categories) Available in Notel/Unitel versus Those Available in Multitel	20
Table 3. Number of Subjects in Each Subgroup at Time 1 and Time 2	22
Table 4. Analysis of Variance for Physical Aggression (Longitudinal)	30
Table 5. Analysis of Variance for Verbal Aggression (Longitudinal)	32
Table 6. Analysis of Variance for Physical Aggression (Cross-sectional)	38
Table 7. Analysis of Variance for Verbal Aggression (Cross-sectional)	42
Table 8. Summary Table of Post Hoc Tests Conducted on the Significant Town x Time Interactions for the Observational Data After the Analysis of Variance	43
Table 9. Repertoire of the Three Highest Physical and Verbal Aggressive Responses at Time 1 and Time 2	45
Table 10. Median Values of Aggression	48
Table 11. Physical Aggression - Notel: Children Above/Below Median at Time 1, Their Increase/Decrease in Aggressive Responding at Time 2, and Their Television Viewing Hours per Week at Time 2	50
Table 12. Verbal Aggression - Notel: Children Above/Below Median at Time 1, Their Increase/Decrease in Aggressive Responding at Time 2, and Their Television Viewing Hours per Week at Time 2	52
Table 13. Physical Aggression - Unitel: Children Above/Below Median at Time 1, Their Increase/Decrease in Aggressive Responding at Time 2, and Their Television Viewing Hours per Week at Time 2	57

## List of Tables continued

	Page
Table 14. Verbal Aggression - Unitel: Children Above/ Below Median at Time 1, Their Increase/Decrease in Aggressive Responding at Time 2, and Their Television Viewing Hours at Time 2	59
Table 15. Physical Aggression - Multitel: Children Above/ Below Median at Time 1, Their Increase/Decrease in Aggressive Responding at Time 2, and Their Television Viewing Hours at Time 2	63
Table 16. Verbal Aggression - Multitel: Children Above/ Below Median at Time 1, Their Increase/Decrease in Aggressive Responding at Time 2, and Their Television Viewing Hours at Time 2	65



## LIST OF FIGURES

	Page
Figure 1. Town by Time Interaction for Physical Aggression (Longitudinal Analysis)	28
Figure 2. Town by Time Interaction for Verbal Aggression (Longitudinal Analysis)	31
Figure 3. Town by Time Interaction for Physical Aggression (Cross-sectional Analysis)	35
Figure 4. Town by Time Interaction for Verbal Aggression (Cross-sectional Analysis)	39
Figure 5. Sex by Time Interaction for Verbal Aggression (Cross-sectional Analysis)	40
Figure 6. Repertoire of the Three Highest Physical and Verbal Aggression Scores at Time 1 and Time 2	44

## ACKNOWLEDGEMENTS

First and foremost, I am indebted to my Supervisor, Dr. Merle Zabrack, whose friendship and constructive criticism led me to the completion of this project. Dr. Tannis MacBeth Williams and Dr. Don Dutton, the other two members of my committee, also offered invaluable advice and assistance. I was extremely fortunate in having such a great committee to guide me through my Master's education.

This work was part of a larger research project entitled "The Impact of Television: A Natural Experiment Involving Three Communities", supervised by Dr. Tannis MacBeth Williams and funded by Canada Council. Consequently, many people were involved in various aspects of data collection and coding, some of whom worked with me on my research. In particular, I would like to thank Joanne McFadden Hordo, Patricia Crawford and Elsie Eccles for collecting time 1 data; Susan Lee Painter and Sue Fiske for helping me collect time 2 data; Virginia Green and Georgio Pastore for their patience during analyses of these data; and Judy Hawkins for typing this thesis.

Needless to say, thanks are extended to the students, parents and teachers in the three towns who permitted the invasion by so many "clip-board carrying" observers!

Lastly but in no way the least, thanks go to Wilf Nicholls for being there when I needed him.

## INTRODUCTION

The effects of viewing filmed aggression on behaviour have been well documented in the laboratory since the early 1960's. Furthermore, recent research in the field has validated the findings of the laboratory experiments. Specifically, this research shows that aggressive techniques seen in films are apparently learned and retained. The focus of the laboratory experiments has been primarily on two different kinds of effects: imitation and instigation. Imitation occurs when what has been seen is copied. Instigation occurs when increased aggressiveness follows what has been seen.

In a series of experiments Bandura and his associates (e.g., Bandura, Ross, & Ross, 1963a; Bandura, Ross, & Ross, 1963b; Bandura, 1965) investigated the effect of viewing a model on children's subsequent imitative responding. Each child was exposed to an adult model in person, an adult model on film, or a cartoon model on film, each of whom aggressed against a plastic, life-sized doll, similar in appearance to Bobo the clown. The control subjects were either exposed to a non-aggressive model or to no model at all. Following the experimental manipulation, the child was left in a room containing the same toys with which the model had played. Coders observed the child's behaviour and scored it for imitative responses. The results of these studies indicated that the aggressive behaviour of the children increased after exposure to an aggressive model.

To explain these results, Bandura postulated in his social learning theory that an observer will learn the behaviour of a model contingent

on four processes: the observer must be attending to the model, be able to retain what he or she has seen, be capable of reproducing the behaviour (that is, have developed the appropriate motor capabilities), and be motivated to learn. Through exposure to an aggressive model, inhibitions in the observer against acting in a violent, aggressive manner are reduced. The experience also helps to shape the style of the aggressive behaviour through acquisition of novel aggressive behaviours. In addition, a theoretical distinction is made between acquisition and performance of behaviour. Although observation of an aggressive model may lead to the learning of aggressive behaviour, the observer may not necessarily perform this behaviour immediately. However, if provoked enough on some future occasion he or she may reproduce the aggressive behaviours that were observed.

Instigation to behave aggressively has been studied extensively with adults by Berkowitz (e.g., Berkowitz, 1965, 1966, 1967): who typically employs the following experimental paradigm: while the subject is working at a task, a confederate induces anger by insulting the subject or shocking him (all subjects were male) for poor task performance. After completing a 'mood' questionnaire, the subject watches an excerpt of a fight scene from the film "Champion" or "Rebel without a Cause" (experimental condition), or an 'exciting but nonaggressive' track race scene. Finally, the subject shocks the confederate, either in the guise of an evaluation of the confederate or as a teaching task. Variations of this design involve the manipulation of aggression-eliciting cues; for example, the shocking procedure occurs in the presence of weapons, the confederate is introduced as a boxer (in contrast to an English

major), or the confederate is given the same name as the aggressor in the film. Angering the subject, exposing him to filmed aggression, and being in the presence of aggression-eliciting cues results in the administration of higher levels of shock; that is, the subject is more aggressive towards the victim. These results led Berkowitz to postulate a classical conditioning model of aggression. Specifically, the model states that an individual will react "impulsively" or "automatically" to environmental stimuli associated with aggression (e.g., weapons), provided that the individual is 'set' or ready to act aggressively (as when angered or insulted).

Although the findings from laboratory experiments relating the observation of aggression with increased aggressiveness have been consistent for both children and adults (Bandura, 1965; Baron, 1971; Berkowitz, 1967; Geen & Stonner, 1972; Gelfand & Hartmann, 1969; Hicks, 1965; Watters & Brown, 1963), some psychologists are reluctant to draw definite conclusions from these studies. The critics argue that it is invalid to extrapolate from these laboratory studies to the real world of the television viewer. These arguments stem from certain limitations of the laboratory findings. For example, commercially available television programmes or films were not employed in some experiments (Bandura, Ross, & Ross, 1963; Bandura, 1965). One could argue that if one of the goals of laboratory experiments is to generalize to the viewing of violence on television, the stimulus material should, at least, be realistic. Further, when television programmes or films were employed (Berkowitz, 1975, 1966, etc.), the excerpts were shown out of context for very limited time periods (e.g., 5 minutes, 7 minutes).

This kind of situation, then, is not analogous to one in which complete programmes are shown, and it is likely that the impact of viewing an isolated violent film sequence is quite different from the effects of viewing an entire film. For example, research indicates that for adults exposure to justified violence results in increased aggressive behaviour in contrast to violence which is portrayed as unjustified (Berkowitz, 1965). Similarly, for school aged children the consequences of violence (whether the aggressor is punished or not) are important determinants of imitative responding (Bandura, 1965). This type of information, which may be evident in full-length films or television programmes, is often missing in the short film excerpts. On the other hand, for very young children, the presence or absence of negative consequences does little to reduce the impact of televised violence (Collins, Berndt, & Hess, 1974; Leifer & Roberts, 1972; Stein & Friedrich, 1975).

Another problem is that exposure to the stimulus material occurs once so only short-term effects of viewing aggression are tested. Yet the long-term effects of exposure to violence might differ. For example, after repeated exposure, a cumulative hypothesis would predict an increase in aggression. Alternatively, satiation or habituation to aggression could occur, resulting in a lessened likelihood of the expression of aggression (Gewirtz, 1967). Furthermore, there is evidence to suggest that repeated exposure to filmed violence results in less emotional reactivity to aggressive displays; that is, desensitization to violence occurs (Cline, Croft, & Courrier, 1973), as does increased tolerance of aggression in one's 'real' environment (Drabman & Thomas, 1973).

Further problems arise because subjects are tested immediately after exposure to the aggressive model or film, and thus the question of retention becomes an issue. That is, if the subject does not immediately perform the observed aggressive behaviour, how long will that behaviour be retained? Hicks (1965) found that children's imitative behaviours were retained for as long as six months. However, as each child was tested immediately after exposure and performed the behaviour then, retention could be due as much to the practice during this first testing as to the original observation of the behaviour. Also, in experimental situations, inhibiting factors against aggressing, such as the salience of social norms, and risk of retaliation are typically absent. In some cases the victim is not even seen or heard (Berkowitz, 1965). Yet the feedback of pain has been shown to be an important inhibitor of aggressive responding (Milgram, 1965; Baron, 1971a, 1971b). In conclusion, it has been argued that laboratory induced aggression (through insulting the subject or administering electric shocks), might not be reproduced in the real world, due to the absence of various inhibitors in the laboratory.

A further feature of experimental paradigms limiting generalization is the dependent measure of aggression employed. Is the physical attack against an inanimate object such as the Bobo doll a realistic measure of aggression (Tedeschi, Smith, & Brown, 1974; Klapper, 1968)? Typically, it is argued, this measure is play activity which may bear little or no relationship to interpersonal aggression. However, there is research indicating that Bobo doll training does transfer to interpersonal situations (Walters & Brown, 1963; Steuer, Applefield, & Smith,

1971), or to situations where the target of aggression is a human dressed as a clown (Hanratty, Liebert, Morris, & Fernandez, 1969). Furthermore, there are real life examples in which behaviour is acquired in 'play contexts' and then performed, through transfer, in interpersonal contexts (for example, soldiers learn to use bayonets by attacking stuffed sacks; boxers learn and practice their skills on punching bags and sparring partners).

Finally, another index of aggressive behaviour used extensively in the laboratory is the Buss (1966) aggression machine, whereby an individual has the opportunity of delivering electric shocks of varying intensity to another person. Although the index has been criticized as not being an indication of aggression because of the lack of sanctions against shocking the 'victim', the validity of this procedure has been demonstrated. Berkowitz, Parke, Leyens, and West (1975) found a positive relationship between counselor ratings of adolescent boys' aggression and the intensity of electric shocks delivered by the boys in the Buss situation. Similarly, children who were rated aggressive by their peers were more likely to deliver noxious noises to their peers in an experimental task (Williams, Meyerson, Eron, & Semler, 1967).

In sum, the laboratory experiments on viewing filmed or modeled aggression and an observer's subsequent aggressive behaviour suggest the following: violence depicted on television can be mimicked by observers either immediately or shortly after its presentation; and, under certain conditions (for example, in the presence of aggression-eliciting cues or anger arousal), televised violence can instigate an increase in aggressive acts.



Due to the nature of these laboratory findings and the problems inherent in laboratory research, there has been increasing interest in demonstrating the effects of exposure to media violence on interpersonal behaviour in naturalistic contexts. The field approach can be separated into two basic methodologies. In correlational research, no manipulation occurs, but instead surveys or observations are conducted to determine if two (or more) variables are related. In experimental field studies, naturalistic observation is combined with experimental manipulation.

Feshback and Singer (1971) conducted a field experiment to determine the effects of sustained exposure to predominantly aggressive or non-aggressive television content on aggressive values and behaviour. Boys in three private schools (consisting of upper middle class youngsters), and boys in four homes (predominantly lower class) were exposed to an aggressive television diet or a nonaggressive television diet for six weeks. A number of measures of aggression were employed, including projective tests, attitude questionnaires, and a behaviour rating scale, completed daily for each boy by his teacher, supervisor, or house parent. Aggressive behaviour was rated retrospectively at the end of each day. The rater noted whether the aggression was directed against peers or authority, whether the aggression was provoked or unprovoked, and whether it was mild or moderately strong.

The results indicated that boys exposed to nonaggressive television content were more aggressive than boys exposed to aggressive television content, both in terms of aggression towards peers and authority figures. When the data were reanalyzed, taking into account the

institutions involved, the above difference only held for boys in the homes, not for those in the private schools. Furthermore, the experimental results were more pronounced for boys initially high in aggressive behaviour or those initially low in TAT fantasy aggression.

Feshbach and Singer concluded that: i) exposure to aggressive content on television does not lead to an increase in aggressive behaviour; and ii) exposure to aggressive content on television seems to reduce or control the expression of aggression in boys from relatively low socioeconomic backgrounds, who are already aggressive, or those who do not express fantasy aggression.

Feshbach and Singer's (1971) findings and conclusions appear to contradict those obtained from the laboratory experiments. However, interpretation of these results has been challenged. Liebert, Sobol, and Davidson (1971) proposed four major methodological drawbacks to the study:

1. The reliability of the primary dependent measure (the behaviour rating scale) was not established.
2. The aggressive programmes were liked significantly more than the nonaggressive programmes (Chaffee & McLeod, 1972), implying an alternative explanation of the results. Boys in the control group could have been more aggressive after six weeks because they resented being restricted to nonaggressive programmes which they liked less, and this resentment was expressed in an increase in aggressiveness.
3. The raters were not blind to the conditions, were untrained and recorded the behaviours retrospectively. The possibility

of response bias cannot be eliminated.

4. The experimental and control groups were treated differently on dimensions other than the manipulation of the independent variable. For example, the experimenters permitted control subjects in two of the boys' homes to see an aggressive show after the boys had expressed very strong objections to being prevented from watching their favourite show. Thus, another rival hypothesis could be postulated: having gained some control over the situation by objecting, the boys then realized they could get their own way by complaining, grumbling, breaking the rules, etc., all of which were measures on the behaviour rating scale.

Further in a replication of the Feshbach and Singer study, Wells (1971) failed to find supporting evidence. Wells found that boys who watched only nonaggressive television were more verbally aggressive than those who watched only aggressive shows, and the latter, in turn, displayed more physical aggression. Wells suggested that the increased physical aggression in the experimental subjects stemmed from the stimulation of "action-adventure" shows, whereas the increased verbal aggression from the control subjects reflected their dissatisfaction in not being allowed to watch the "action-adventure" shows.

Stein and Friedrich's (1971) study of the influence of aggressive, prosocial and neutral television shows on children's interpersonal behaviour in a naturalistic situation supported Wells' conclusions. For a period of nine weeks, ninety-seven nursery school children participated in a field experiment. During the first three weeks, the children were

observed in free play to ascertain baseline rates of their aggressive and prosocial behaviour. For the following four weeks, the children were exposed to either aggressive television programmes (Batman and Superman cartoons), prosocial television programmes (Mister Roger's Neighbourhood) or neutral children's films. During this four week period and the two postviewing weeks, coders observed the children in free play. Children initially high in interpersonal aggression who were exposed to aggressive programmes subsequently displayed greater aggression than children exposed to neutral or prosocial shows. Children initially low in aggression did not respond differentially to the three treatment conditions. There was also evidence that television can play a positive role in children's social development: those children exposed to the prosocial programmes showed higher levels of self-controlling behaviour and task persistence than children exposed to neutral or aggressive shows.

Steuer, Applefield, and Smith (1971) obtained further validation that viewing aggression increases aggressive behaviour in children. They studied ten preschool children, comprising a racially and socio-economically mixed group. First, the children were matched into pairs on the basis of the amount of time they spent viewing television at home. Then the children were observed in free play for ten days to establish a baseline rate of aggression. During the following eleven days, one member of the pair viewed an aggressive television programme daily, while the other member viewed a nonaggressive television programme. Each day observations of the children in free play provided measures of interpersonal physical aggression. By the end of the eleven days,

children in the aggressive treatment group were more aggressive than children in the matched control group, suggesting that the television treatment had an effect on the children's interpersonal aggressive behaviour. The results also indicated that the aggressive behaviour of two particular children in the experimental group was discrepant in that it increased more slowly than the behaviour of other children exposed to the aggressive programmes. Steuer and his colleagues proposed two alternative interpretations for this finding: either the two children were responding to the aggressive television programmes in the same way as the other children but there was a latency effect. Alternatively a secondary exposure effect might have been operating; that is, whereas most of the children were influenced by the experimental manipulation, the two discrepant children may have been displaying more hostility in response to the other children's aggression rather than in response to the film.

Another possible secondary exposure effect is peer modelling (Parke, Berkowitz, Leyens, West, & Sebastian, 1975). A child may not directly imitate what he or she has seen on television but may, instead, imitate another child who has been affected by the televised violence. In addition, the likelihood of imitating a peer's aggressive actions or retaliating against an attacker may be increased after watching an aggressive film, even though the film itself may not have elicited aggressive responding. Parke et al.'s (1975) conclusions were drawn from a series of field experiments. Boys who watched violent movies were more aggressive than boys who viewed neutral films. The subjects were 14-18 year old boys from delinquent homes. The study was conducted in

four phases over a seven week period. Observations of the boys' behaviour during free play in the first three weeks constituted the baseline level of aggression. During the following week, five films were shown; boys in one cottage (the basic unit in the institutional centre which housed approximately thirty boys) viewed a commercially available aggressive movie each night, while boys in the second cottage watched a neutral nonaggressive film. Coders observed the boys' behaviour both before and after the film. (Viewing television was not permitted during the experimental week.) On the day following the final film, the boys from both cottages participated in a laboratory assessment of aggression (amount of electric shock administered to a confederate), under either angered or nonangered conditions. During the final three weeks of the study, any long-term effects of the films on the boys' aggressive behaviours were assessed. The results supported the proposition that exposure to filmed violence increased aggressive behaviour in the viewers, and again, it was the highly aggressive boys who were most affected.

As mentioned previously, a second methodological approach to collecting data in the field has been the correlational survey study. Himmelweit, Oppenheim, and Vince (1958) compared children who did not have television and those who did on a number of measures. The measures of aggression consisted of teacher ratings for each child. The results indicated that no difference in aggression existed between viewers and nonviewers. Schramm, Lyle, and Parker (1961) collected similar data in Canada and the United States. They studied two Canadian towns one of which had television reception. The measure of aggression was a self-report questionnaire, in which the subjects indicated their agreement

or disagreement with twenty-four statements (for example, "I don't see anything especially wrong about a fight between two groups of teenagers; it's their business, and adults should stay out of it"). The sixth grade children in Canada who did not have television were more aggressive than subjects who did have television. There was no difference between the two towns for the children in the tenth grade on the aggression measure. In the American part of the study, the children were divided into groups who were high or low in the number of hours spent watching television and high or low in the amount of printed material they read. Children classified as high television/low print were higher in aggression than children classified as low television/high print. Schramm et al. concluded that: "For some children, under some conditions, some television is harmful. For other children under the same conditions, or for the same children under other conditions, it may be beneficial. For most children, under most conditions, most television is probably neither particularly harmful nor particularly beneficial" (p.1).

The two preceding studies contain two major methodological problems (Liebert, 1973). First the measures of aggression were inadequate. In the Himmelweit et al. study the teachers were asked to indicate only whether a child was aggressive or not, they were not asked to report other characteristics related to aggression, for example, bossiness, loudness, etc. In the second study (Schramm et al., 1961), only 4 of the 24 self-report measures were concerned with aggressive behaviour. The second methodological problem was that aggression was related to the existence of a television in the home and not to what the children actually watched or reported watching. It is not the existence of

television per se which has an effect in increasing children's aggression, but rather, the act of watching television and, more possibly, the exposure to violence on television.

One of the few longitudinal studies conducted supported the premise that watching television violence increases aggressive behaviour (Eron, Huesmann, Lefkowitz, & Walder, 1972). Information was first collected on measures of aggression and potential predictors of aggression when children were in the third grade. The main measure of aggression consisted of peer nominations; that is, each child nominated any of his or her classmates on ten items describing aggression. Then, mothers were interviewed to obtain the children's television preferences. Preferences for violent television and aggression were positively correlated with peer nominations but for boys only. Ten years later, the researchers conducted the second phase of the study. The teenagers (now 18-19 years old) again nominated those among their peers who were considered to be aggressive and gave their own television programming preferences. A highly significant relationship was obtained between preference for violent television in the third grade and aggressive habits, as indicated by peer nominations, ten years later. Using cross lagged panel correlations and partial correlations, the researchers concluded that the single most plausible hypothesis for their results was that preference for watching violent television in the third grade contributed to the development of aggressive behaviour. Eron et al. do not argue that television violence is the only cause of aggressive behaviours, but they do argue that television violence explains a larger proportion of the variance than any other single factor studied.



A few of the problems with this study are those inherent in the collection of longitudinal data. Chaffee (1972) argued the need for longitudinal data to be restricted within a homogeneous life cycle period, that is, either childhood or adolescence but not from one to the other. Additionally, how do changes in society over a ten year period affect the results in a longitudinal study? If the period between data collections is reduced (for example, two to three years), the changes, if any, in society would likely be less radical. Chaffee also discusses some of the methodological problems of the Eron et al. study. For example, programme preferences at time 1 were obtained by parental report, which can vary significantly from a child's self-report (Greenberg, Ericson, & Vlahos, 1971), whereas programme preferences at time 2 were self-reported. Peer nominations at time 1 were for the present and restricted to classmates at that time, whereas at time 2, peer nominations were retrospective and not restricted to the classmates at that time. That is, the teenagers were asked to nominate any of their classmates in the last ten years, whom they perceived to be aggressive.

The majority of studies reviewed indicate that viewing violence on television does affect aggressive behaviour. There is, however, enough inconclusive evidence, methodological criticism (for example, in the studies of Feshbach & Singer, 1971; Eron et al., 1972; Himmelweit et al., 1958; Schramm et al., 1961) and the use of special subjects, thus limiting generalizability (as in Berkowitz et al., 1975; Feshbach & Singer, 1971), to warrant further research, especially in naturalistic settings.

The present longitudinal study was based on a natural experiment.

in three small towns in British Columbia, Canada. In designing the study some of the problems mentioned in previous research were taken into account (for example, multiple measures of aggression, including free play behaviours, were collected and children's television viewing habits were recorded). The study was conducted over a period of two years (1973 to 1975). Cross-sectional comparisons were made between three groups of children who were exposed to differing amounts of television. Specifically, in the initial phase of the study (1973), children in the town called Notel had very limited exposure to television; that is, although some of the children may have seen television while visiting friends or relatives, the town itself did not have television reception and children could not watch it regularly in their homes. (See Appendix J for children's television viewing hours per week in Notel, Unitel, and Multitel at time 1 and time 2. The data for Notel children at time 1 indicate that 70% did not watch television.) At the second phase of data collection (1975), television had been available in Notel for two years. During this time approximately 90% of the town's population received television in their homes. The second town, Unitel, received two Canadian stations during both phases (both CBC, but from different transmitters, therefore, the content of each channel varied slightly). The third town, Multitel, received Canadian (CBC) and American (ABC, CBS, NBC) stations at both phases. All three American networks and the Canadian channel were available only to those people who were on cable television, approximately 85% of the population. Those people not on cable received only CBS. The three towns were comparable on various demographic dimensions, such as size, climate,

distance from the nearest urban centre, socioeconomic levels, etc. The relevant demographic data are illustrated in Table 1 and although there are small differences among the towns, these were judged to be minor and the towns were considered generally comparable.<sup>1</sup> Multiple measures of aggression were collected and consisted of observing children's behaviour in free play and peer and teacher ratings of aggression.

The following hypotheses were tested:

Hypothesis 1: Based on social learning theory (Bandura, 1963), the aggressive behaviour of children in Notel was expected to increase from time 1 to time 2. That is, through exposure to aggressive models on television, children's inhibitions against acting in an aggressive manner might be reduced. To test this hypothesis, the same children were observed two years after the introduction of television. To assess any confounding effects due to age differences, data were collected at time 2 from children in grades 1 and 2, who were the same age as the children initially studied. Since the viewing of television was hypothesized to affect the children's aggressiveness, information about the children's television viewing habits was also obtained.

Hypothesis 2: Since the social learning/modelling approach also implies an acquisition of new forms of aggressive behaviour, the aggressive repertoires of children in Notel were expected to change from time 1 to time 2. In addition, the repertoires of Notel children at time 1 were expected to be qualitatively different from the children's repertoires in Unitel and Multitel, because of the lack of televised models in Notel. However, at time 2, the aggressive repertoires in all three groups of children were expected to be more homogeneous.

Table 1  
Demographic Data for Notel, Unitel, and Multitel  
(Listing 1971 Census Data)

	Notel	Unitel	Multitel
1971 Population	658	693	872
Town Area	354 acres	Not available	375 acres
Principle source of income	logging railroad farming	logging railroad	logging mining
Mean income (head)	\$7377	\$6854	\$8055
Family heads with English as official language	88%	93%	95%
Family heads with Mother tongue English	74%	81%	83%
Proportion of experienced labour force in blue collar jobs	62%	72%	77%
Family heads educated beyond high school	37%	23%	24%
Birthplace Canada	77%	90%	77%
If born in Canada, birthplace B.C.	64%	34%	71%
Female population	51%	57%	52%
Proportion of population over 15 years	63%	65%	71%

Hypothesis 3: If the effects of viewing aggression modelled on television are cumulative for children, aggression in both Unitel and Multitel should increase from time 1 to time 2, as these children have been continually exposed to television during this time. However, there is also the possibility of a ceiling effect occurring. Therefore, once a certain level of aggression, or a certain age is reached, the effect of television may no longer be evident. If this ceiling had not been attained at time 1, children in Multitel should increase more in their aggressiveness than Unitel children, since U.S. produced television has been shown to contain more violent content than Canadian produced television (Singer, 1970; Williams, Zabrack, & Joy, 1977). In addition, Gerbner and Gross (1976) have shown that violent content on U.S. television has increased from 1967 to 1976. The comparison between shows available in Notel, Unitel, and Multitel is given in Table 2, and the rank ordering of shows for aggression from the content analysis of television conducted by Williams, Zabrack, and Joy (1977).

The peer and teacher ratings of aggression were collected to validate the observational measures employed in testing the above hypotheses. The correlations among the multiple measures of aggression were expected to be significant. In addition, the issue of aggressive behaviour and sex differences was taken into account, by observing both males and females. Past research has indicated that the effects of viewing violent television on aggressive behaviour may hold only for males (Eron et al., 1972), and other research has consistently shown males to be more physically aggressive than females (Feshbach, 1970).

Table 2

Comparison between the Number of Shows (in Categories) Available

in Notel/Unitel versus Those Available in Multitel.

Also Shown in the Rank Order of Categories

for Aggression (Williams, Zabrack, & Joy, 1977)

Rank Order for Aggression	Number of Shows in These Categories Available in	
	Notel/Unitel (Actual number)	Multitel
1. Crime	2	21
2. Documentaries	3	6
3. Animated	0	16
4. Situation Comedies	12	26
5. Adventure	3	6
6. Children's Non-Animated	8	17
7. Music/Variety/Talk	5	12
8. Instruction/Religion	4	3
9. Drama/Medical	7	12
10. Game	2	8
News/Public Affairs *	5	17
Sports	4	3

\*The above 2 categories were not analyzed by Williams, Zabrack, & Joy. Singer & Gordon (1977) found: "News and sports coverage in the newspapers and on television newscasts sampled is relatively violent. Overall, 40% of the selected items fell into the violence and conflict-related categories..."

## METHOD

### Subjects

Observational Study: A total of 240 children from the three towns (Notel, Unitel, and Multitel) participated in the observational study. Those children were grouped in the following manner: At time 1, five male and five female subjects in each of grades 1, 2, 4, and 5 were observed in each town. At time 2, five males and five females in each of grades 1 and 2 were observed in each town (this was to provide cross-sectional data for comparison with the grades 1 and 2 children at time 1); in addition five males and five females in each of grades 3 and 4 were observed in each town, (the grade 4 children at time 2 also provided data for cross-sectional comparison with the time 1 grade 4 data). A subsample of children in grades 3 and 4, at time 2, provided longitudinal data for comparison with the data collected on the same children in grades 1 and 2 at time 1. It was originally proposed that all 60 children initially in grades 1 and 2 would be observed at time 2. However, only 44 (73%) of these children were still available two years later (16 in Notel, 15 in Unitel, and 13 in Multitel). Therefore, 16 additional grade 3 and 4 children were observed at time 2, as well as the 60 new grade 1 and 2 children. The number of subjects in each subgroup, whether longitudinal or cross-sectional is illustrated in Table 3.

The criteria employed for involving a child in the observational study were the following: the child was not substantially below average in ability (that is, the teacher did not consider the child's level of ability to be remedial); the child had not repeated a school grade; the





child had lived more than three years in the town; no sibling had been selected to participate in the study. The latter criterion was important because siblings may be similar in aggressive behaviour due to similarities in their environments, which, in such a small sample size, could introduce a confounding variable. This criterion was especially relevant at time 2 when new subjects were being chosen.

Peer and Teacher Ratings: All children in the four grades at time 1 and time 2 were involved in the peer and teacher ratings of aggression.

### Procedure

Peer Ratings of Aggression. Each child nominated the three classmates whom he perceived as the bossiest, fighting the most, talking back to the teacher the most, arguing and disagreeing the most, and pushing, shoving, and poking the most. Due to difficulty in writing their responses and/or reading and understanding the forms, children in grades 1 and 2 were interviewed individually. The older children completed the forms themselves in a group setting, with assistance if required (see Appendix A).

Teacher Ratings of Aggression. Each child was rated by his or her teacher on ten seven-point scales of aggression and activity. These indicated the extent to which the teacher considered each child to be active, aggressive, argumentative, bossy, competitive, dominant, friendly, honest, hostile, and loud (see Appendix B).

Television Viewing Habits. The children were individually interviewed about their television viewing habits. An extensive questionnaire was completed which provided information about the number of hours

spent viewing (with weekday and weekend viewing separated), the child's favourite shows, the previous day's viewing, programmes usually watched, the existence of parental guidance, reading habits, etc. (See Appendix C for Notel and Unitel's questionnaire, and Appendix D for Multitel; as the latter town received more stations, a more extensive questionnaire was required.)

Observation Procedure. Children in the observational sample (5 males and 5 females from each of the four grades in each town) were observed during free play periods (that is, before school, at recess, at lunch, and after school), over a period of two weeks. Each child was observed for 21 one minute intervals and no child was observed for any two consecutive minutes. For reliability purposes, two independent observers watched each child, scoring categories of both physical and verbal aggression. The categories were non-hierarchical; that is, in any one minute period, any of the aggression categories could be coded once or more than once.<sup>2</sup> The physical aggression categories consisted of behaviours labelled physical assault, physical prevention, and physical threat. These categories were further subdivided into a total of fourteen physical aggression categories; for example, PA -- subject hits, slaps, punches or strikes the target with any part of the body above the waist; PP -- subject pushes, pulls, holds, grabs, drags, or chokes the target; PT4 -- subject chases the target with a held object, etc. (see Appendix E). For verbal aggression, there were nine subcategories; for example, VD -- subject disparages the target, mocks, etc.; VT -- subject threatens to hurt target; VC -- subject argues or is at cross purposes with target, etc. (see Appendix E).

During the free play periods, the observers walked around the playground, scoring the subject's behaviour as unobtrusively as possible.<sup>3</sup> The children had been furnished with a cover story which appeared, on informal questioning, to have been accepted. Specifically, at the beginning of the week in each town, both observers went into each class, introduced themselves and explained their presence. They said they would be sitting in the classrooms, interviewing the children, and walking around the playground before school in the morning, during recess and lunch, and after school, seeing how children play together. There was no mention of television or aggression. While on the playground, the observer located a subject, observed his or her behaviour for one minute and then moved on to the next subject scheduled for observation. The behaviours were recorded on the labelled coding sheets (see Appendix F).

The two observers were trained prior to arrival in the three towns on a different sample of schoolaged children than those in the study. The reliability attained during training was .85. Since two observers coded the children's behaviour in each town, reliability was tested constantly during the observation period. The mean reliability at time 1 was 0.86 (based on 40 scores) and .80 at time 2 (based on 51 scores).<sup>4</sup>

## RESULTS

The results of this study were divided into several sections. First, the results of the observational study will be presented. These results are considered the most important since the data collected were observations of children in natural free play, as opposed to the somewhat retrospective paper and pencil data collected from the teachers and peers. However, the teacher and peer measures of aggression are important as validation of the data collected through observations. The section on the observational study will be subdivided into analyses of variance for the longitudinal data, analyses of variance for the cross-sectional data, the repertoire of aggressive behaviours for time 1 and time 2 in all three towns, and finally examination in more detail of the longitudinal children who were either high or low in aggression at time 1 and their aggression scores at time 2. The television viewing habits of these latter children were also studied. The final section will include the intercorrelations among the multiple measures of aggression; that is, the observational measures, the peer ratings, and the teacher ratings.

### Observational Study

Observational measures of both physical and verbal aggression were employed at time 1 and time 2. Therefore a number of different analyses of variance were conducted. First, longitudinal (repeated measures) analyses of variance were conducted on the data of children observed at time 1 who were again observed at time 2. Further, cross-sectional

analyses of variance were conducted on the children observed at time 1 and on similarly aged children observed at time 2.

The two dependent variables in all the analyses of variance of the observational data were the two means of (a) the fourteen physical aggression scores, and (b) the nine verbal aggression scores.

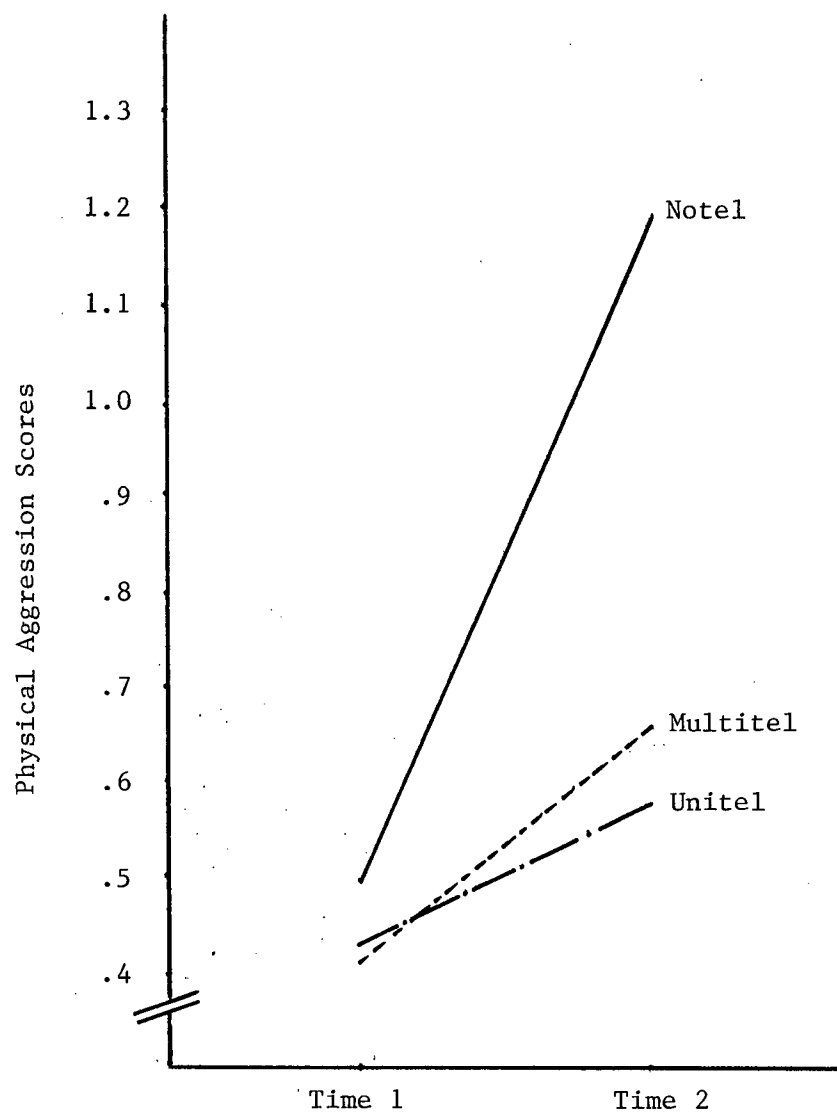
### 1. Longitudinal Analyses

Data collected on children observed at time 1 and again at time 2 were analyzed in two 3 x 2 repeated measures analyses of variance. The independent variables were town and sex and the dependent measures were the physical and verbal aggression means. These analyses involved the scores of 44 children (16 in Notel, 15 in Unitel, and 13 in Multitel).

The focus on this study was the effect of television exposure on children's physical and verbal aggression. From the analyses conducted it was important to examine how the children's scores in each town varied over time. Therefore, the town x time interaction in the analyses of variance is considered an important one, as it demonstrates what occurred in each town over time.

i) Physical Aggression. In the repeated measures analysis of variance conducted on the physical measures of aggression, a town by time interaction was obtained,  $F(2,38) = 3.082$ ,  $p < .06^5$  (see Figure 1). Tukey A post hoc analyses<sup>6</sup> revealed no significant differences among the children's aggressive scores in the three towns at time 1. However, at time 2, the children in Notel were significantly more aggressive ( $p < .01$ ) than the children in the other two towns, who did not differ significantly. Furthermore, the aggressive behaviour of the children in Notel increased significantly from time 1 to time 2 ( $p < .01$ ),

Figure 1. Town by Time Interaction for Physical Aggression.  
Longitudinal Analysis.



whereas the increases in the other two towns were not significant.

In addition, the main effect for time was significant,  $F(1,38) = 14.406$ ,  $p < .001$ , showing an overall increase in physical aggression from time 1 to time 2, which was most likely due to the increase in Notel children's aggression over time, as discussed above. There was also a significant main effect for sex,  $F(1,38) = 17.101$ ,  $p < .001$ , specifying that males were more physically aggressive than females, a result found consistently in research on children's aggressive behaviour (Feshbach, 1970). See Table 4 for the analysis of variance results for the physical aggression scores.

ii) Verbal Aggression. A town by time interaction was obtained for verbal aggression as well,  $F(2,38) = 2.674$ ,  $p < .08$  (see Figure 2). Post hoc analyses revealed that at time 1, the children in Multitel were significantly more aggressive than children in Unitel ( $p < .05$ ), but not more aggressive than the children in Notel, who, in turn, did not differ significantly from the children in Unitel. At time 2, Notel children's scores had increased significantly ( $p < .05$ ), resulting in these children being more aggressive than those in Unitel ( $p < .01$ ) and Multitel ( $p < .01$ ), who did not differ significantly.

Additionally, there was a significant main effect for towns,  $F(2,38) = 3.843$ ,  $p < .04$ . Tukey A post hoc analysis revealed that there were no significant pair-wise comparisons. However, an analysis of complex comparisons (Scheffé post hoc test), showed that the mean scores for Notel and Multitel combined were significantly greater than the mean aggression score of children in Unitel ( $p < .05$ ). See Table 5 for the analysis of variance results for the verbal aggression scores. It

Table 4  
 Analysis of Variance for Physical Aggression  
 (Longitudinal Data)

Source	Degrees of Freedom	Mean Squares	F Ratio	Probability
Town	2	0.650	2.981	0.063
Sex	1	3.730	17.101	0.001*
Town x Sex	2	0.246	1.126	0.34
S-within	38	0.218		
Time	1	2.780	14.406	0.001*
Town x Time	2	0.595	3.082	0.06
Sex x Time	1	0.194	1.008	0.32
Town x Sex x Time	2	0.003	0.014	0.99
Time-s-within	38	0.193		

\* indicates a significant result



Figure 2. Town by Time Interaction for Verbal Aggression.  
Longitudinal Analysis

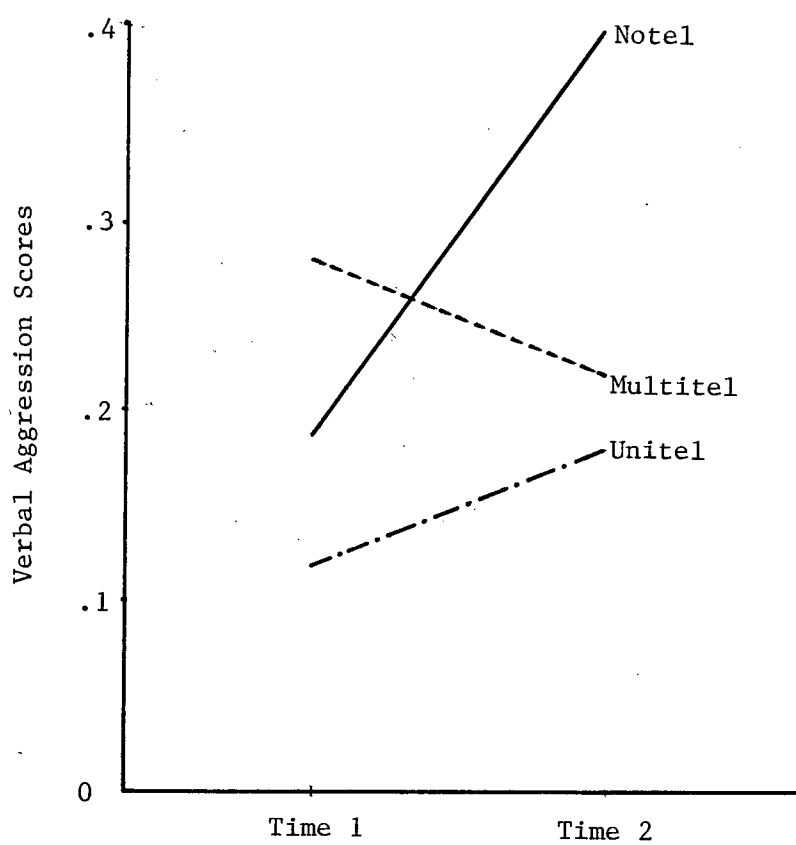


Table 5  
 Analysis of Variance for Verbal Aggression  
 (Longitudinal Data)

Source	Degrees of Freedom	Mean Squares	F Ratio	Probability
Town	2	0.176	3.483	0.04*
Sex	1	0.040	0.798	0.38
Town x Sex	2	0.116	2.287	0.12
S-within	38	0.051		
Time	1	0.094	2.173	0.15
Town x Time	2	0.115	2.674	0.08
Sex x Time	1	0.109	2.534	0.12
Town x Sex x Time	2	0.023	0.540	0.59
Time-s-within	38	0.043		

\* indicates a significant result

is interesting to note that there was no significant main effect for sex. Since the research on sex difference for verbal aggression is very inconclusive (Feshbach, 1970), these results are an interesting addition to the literature.

In sum, the repeated measures analyses of variance for both physical and verbal aggression indicated that only the aggression scores of children in Notel increased significantly from time 1 to time 2, resulting in Notel children being significantly more aggressive than children in the other two towns. The males in this sample displayed more physical aggression than the females and no sex differences were obtained for the verbal aggression scores.

## 2. Cross-sectional Analyses.

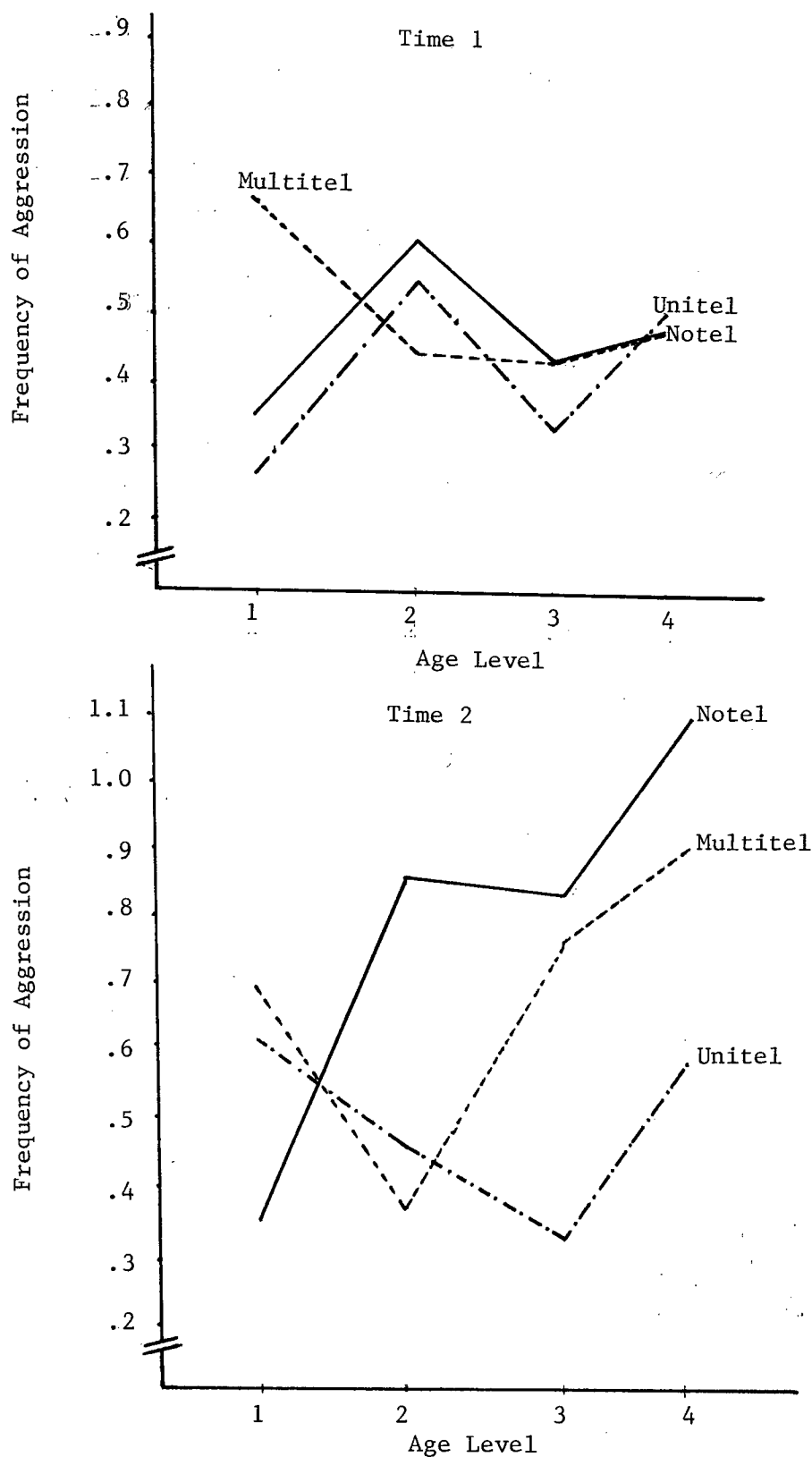
The cross-sectional analyses of variance were conducted on the children's aggression scores obtained at both times. This involved a total of 240 children, in four different age levels. At time 1, the four levels were grades 1, 2, 4, and 5. At time 2, the four levels were grades 1, 2, 3, and 4. The cross-sectional analyses enabled the assessment of any possible confounds due to developmental trends which could have provided an alternative explanation for the obtained longitudinal results. That is, as the longitudinal children at time 2 were two years older, the increase in aggression could be attributed to the children being older and not to the effect of television exposure over time. By making cross-sectional comparisons, the effects of age, if any, could be assessed. Thus, in the cross-sectional analyses both the town by time interaction and the grade effect were considered to be important.

Two 4-way analyses of variance were conducted for the physical and verbal aggression means. The independent factors were town, sex, time, and grade.

i) Physical Aggression. The cross-sectional analysis of variance for physical aggression revealed a significant town by grade interaction,  $F(6,192) = 2.668$ ,  $p < .02$  (see Figure 3). As there was no main effect for grade it was important to investigate this interaction further to ascertain if the younger or older children were being more aggressive. When differences among age levels were examined for each town, the grade 1 children in Notel were significantly less aggressive than children at the three other age levels ( $p < .01$ ), whereas it was the grade 2 children in Multitel who were significantly less aggressive than the children at the other three age levels ( $p < .05$ ).<sup>7</sup> There were no significant differences among the four levels in Unitel. In addition, post hoc analyses showed that there were town differences for age levels 1, 2, and 3 ( $p < .05$ ). Specifically, grade 1 children in Multitel were more aggressive than the grade 1 children in Notel ( $p < .01$ ) and Unitel ( $p < .01$ ), who did not differ significantly. Grade 2 Notel children were more aggressive than Unitel and Multitel grade 2 children ( $p < .01$ ), who were similar. The third age level children in Unitel were significantly less aggressive than third age level children in the other two towns ( $p < .01$ ). Finally, level 4 children (grade 5 at time 1, grade 4 at time 2) in all three towns did not differ significantly. Examination of this interaction revealed no consistent patterns. The children in Notel increased in aggression with age; however, children in both Multitel and Unitel did not display this gradual increase with age. Although

Figure 3. Town by Grade x Time Interaction for Physical Aggression.

Cross-Sectional Data.



N.B. Though this interaction was not significant, it shows in more detail, i.e., separating time 1 and time 2, the significant town by grade interaction.

there is the possibility that a trend was developing since in all three towns, there was an increase in aggressive behaviour from level 3 to level 4, observing children in higher grades would be necessary before conclusions could be drawn. Additional investigation of more complicated interactions (e.g., town x time x grade) revealed no consistent patterns and furthermore, no main effect for grade was obtained. Therefore it appears that age and physical aggression were not related in this sample.

The time by town interaction for physical aggression was not significant at less than the .10 level. However, visual inspection of the town means across time revealed a trend consistent with the results obtained for the data on the longitudinal children. Specifically, there were no substantial differences among the towns at time 1, whereas the children in Notel, at time 2, were more physically aggressive than the children in the other two towns. It appears also that the children in Multitel were more physically aggressive at time 2 than those in Unitel. Children in each town increased in physical aggression from time 1 to time 2, with the Notel children displaying the largest increase. Thus, although there was no statistical significance the pattern of results mirrored that of longitudinal subjects.

There were significant main effects for town,  $F(2,192) = 4.0$ ,  $p < .02$ ; sex,  $F(1,192) = 60.11$ ,  $p < .001$ ; and time,  $F(1,192) = 30.724$ ,  $p < .001$ . Specifically, children in Notel displayed significantly more physical aggression than Unitel children ( $p < .05$ ). Multitel children were not significantly different from either Notel or Unitel children. Consistent with the longitudinal analysis, males were more physically aggressive than females, and there was an increase in aggression from

time 1 to time 2. See Table 6 for the analysis of variance results for the cross-sectional physical aggression scores.

ii) Verbal Aggression. The analysis of variance for verbal aggression revealed that there was a significant town by time interaction,  $F(2,192) = 6.92$ ,  $p < .001$  (see Figure 4). Post hoc analyses showed the following: (1) at time 1, children in Multitel were significantly more aggressive ( $p < .05$ ) than children in Notel and Unitel, who did not differ significantly; (2) at time 2, children in Notel displayed significantly more verbal aggression ( $p < .05$ ) than Multitel children, who in turn, were more verbally aggressive than those in Unitel ( $p < .05$ ); and (3) Notel children were significantly more verbally aggressive at time 2 than at time 1 ( $p < .01$ ), but the children in Unitel and Multitel did not increase significantly over time.

No age differences were obtained, that is neither the town by grade interaction nor the main effect for grade were significant, implying that the differences found in the longitudinal analysis for verbal aggression could not be attributed to developmental changes. There were significant main effects for town,  $F(2,192) = 10.152$ ,  $p < .001$ ; sex,  $F(1,192) = 5.49$ ,  $p < .01$ ; and time,  $F(1,192) = 8.249$ ,  $p < .005$ . Namely, children in Unitel were significantly less aggressive than the children in the other two towns ( $p < .01$ ), who did not differ significantly.

The significant main effect for sex indicated that males were more verbally aggressive than females. This result also emerged in the significant sex x time interaction,  $F(1,192) = 5.037$ ,  $p < .03$  (see Figure 5). Post hoc analysis revealed that males increased in verbal

Table 6  
 Analysis of Variance for Physical Aggression  
 (Cross-Sectional)

Source	Degrees of Freedom	Mean Squares	$\frac{F}{\text{Ratio}}$	p
Town	2	0.680	3.999	0.02*
Sex	1	10.220	60.111	0.001*
Town x Sex	2	0.027	0.161	0.85
Time	1	5.224	30.724	0.001*
Town x Time	2	0.281	1.655	0.19
Sex x Time	1	0.394	2.319	0.13
Town x Sex x Time	2	0.073	0.428	0.65
Grade	3	0.272	1.598	0.19
Town x Grade	6	0.454	2.668	0.02*
Sex x Town	3	0.356	2.095	0.102
Town x Sex x Grade	6	0.180	1.059	0.39
Time x Grade	3	0.326	1.916	0.13
Town x Time x Grade	6	0.226	1.328	0.25
Sex x Time x Grade	3	0.309	1.818	0.15
Town x Sex x Time x Grade	6	0.547	3.215	0.005*
S-within	192	0.170		

\* indicates a significant result



Figure 4. Town by Time Interaction for Verbal Aggression.

Cross-sectional Data

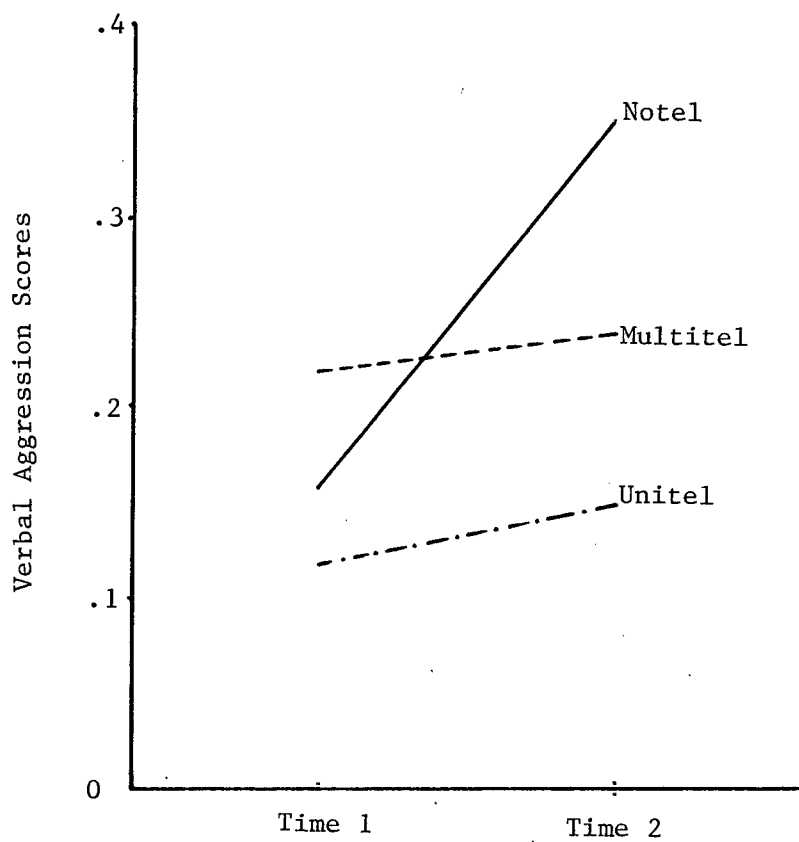
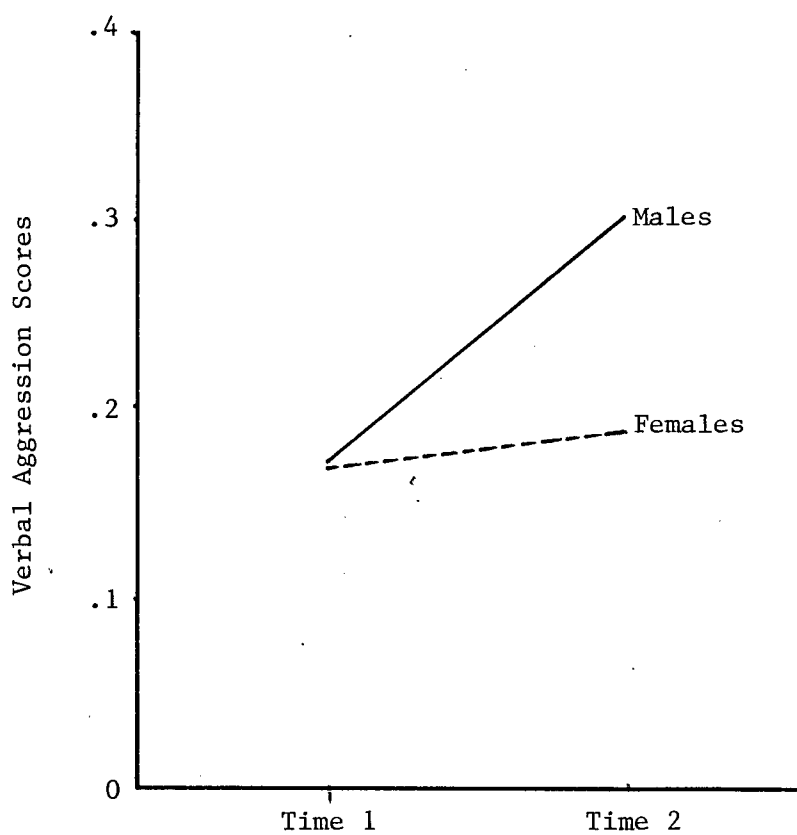


Figure 5. Sex by Time Interaction for Verbal Aggression  
Cross-sectional Data



aggression from time 1 to time 2 ( $p < .05$ ), but females did not increase significantly. Furthermore, at time 1, there was no significant difference between males and females. This suggests that the increase in verbal aggression in Notel between time 1 and time 2 (see above), was probably due to the behaviour of the males. Previous research has demonstrated that males can be more verbally aggressive than females (Gordon & Smith, 1965). However, this is not a consistent finding and no sex difference was obtained for the children in the longitudinal analysis. See Table 7 for the analysis of variance results for the verbal aggression scores, for the cross-sectional data. The post hoc results obtained from the observational data for the three town x time interactions are represented in diagramatic form in Table 8.

### 3. Repertoire of Aggressive Behaviours.

To assess potential qualitative differences among the towns, as indicated in hypothesis 2, the specific behavioural responses were examined. The frequencies of occurrence of each physical and verbal aggressive category were recorded, for males and females, at time 1 and time 2, for each town (see Appendix I). At time 1, the repertoires for males and females in all three towns were similar, especially for the three highest physical measures and the three highest verbal measures (see Figure 6). See Table 9 for the actual scores for the three highest responses at time 1 and time 2. Specifically, for physical aggression, children pushed (PP), hit each other above the waist (PA1), and interfered in the activity of another (PI); in addition, for verbal aggression, children made disparaging remarks (VD), argued (VC), and commanded each other in loud and angry voices (VS). Additionally, at

Table 7  
Analysis of Variance for Verbal Aggression  
(Cross-Sectional)

Source	Degrees of Freedom	Mean Squares	F Ratio	Probability
Town	2	0.351	10.152	0.001*
Sex	1	0.190	5.490	0.02*
Town x Sex	1	0.061	1.774	0.17
Time	1	0.285	8.249	0.005*
Town x Time	2	0.239	6.919	0.001*
Sex x Time	1	0.175	5.057	0.03*
Town x Sex x Time	2	0.011	0.312	0.732
Grade	3	0.050	1.435	0.23
Town x Grade	6	0.032	0.938	0.47
Sex x Grade	3	0.019	0.543	0.65
Town x Sex x Grade	6	0.031	0.904	0.49
Time x Grade	3	0.048	1.384	0.25
Town x Time x Grade	6	0.016	0.459	0.84
Sex x Time x Grade	3	0.025	0.737	0.531
Town x Sex x Time x Grade	6	0.044	1.280	0.27
S-within	192	0.035		

\* indicates a significant result

Table 8

Summary Table (Diagramatic Form) of Post Hoc Tests Conducted  
on the Significant Town x Time Interactions for the  
Observational Data After the Analyses of Variance

Longitudinal Sample

## Physical Aggression

	<u>Time 1</u>		<u>Time 2</u>
Notel	0.498		1.208
Unitel	ns 0.429 ns	p<.01	0.582 p<.01
Multitel	0.415 ns		0.657 ns

## Verbal Aggression

	<u>Time 1</u>		<u>Time 2</u>
Notel	0.191 ns		0.396 p<.01
Unitel	ns 0.124 p<.05	p<.01	0.181 ns
Multitel	0.279		0.215

Cross-Sectional Sample

## Verbal Aggression

	<u>Time 1</u>		<u>Time 2</u>
Notel	0.163 ns		0.354 p<.05
Unitel	p<.05 0.116 p<.05	p<.05	0.152 p<.05
Multitel	0.244		0.224

N.B. Town x Time interaction for physical aggression in cross-sectional analysis of variance was not significant.

Figure 6. Repertoire of the Three Highest Physical and Verbal Aggressive Scores at Time 1 and Time 2

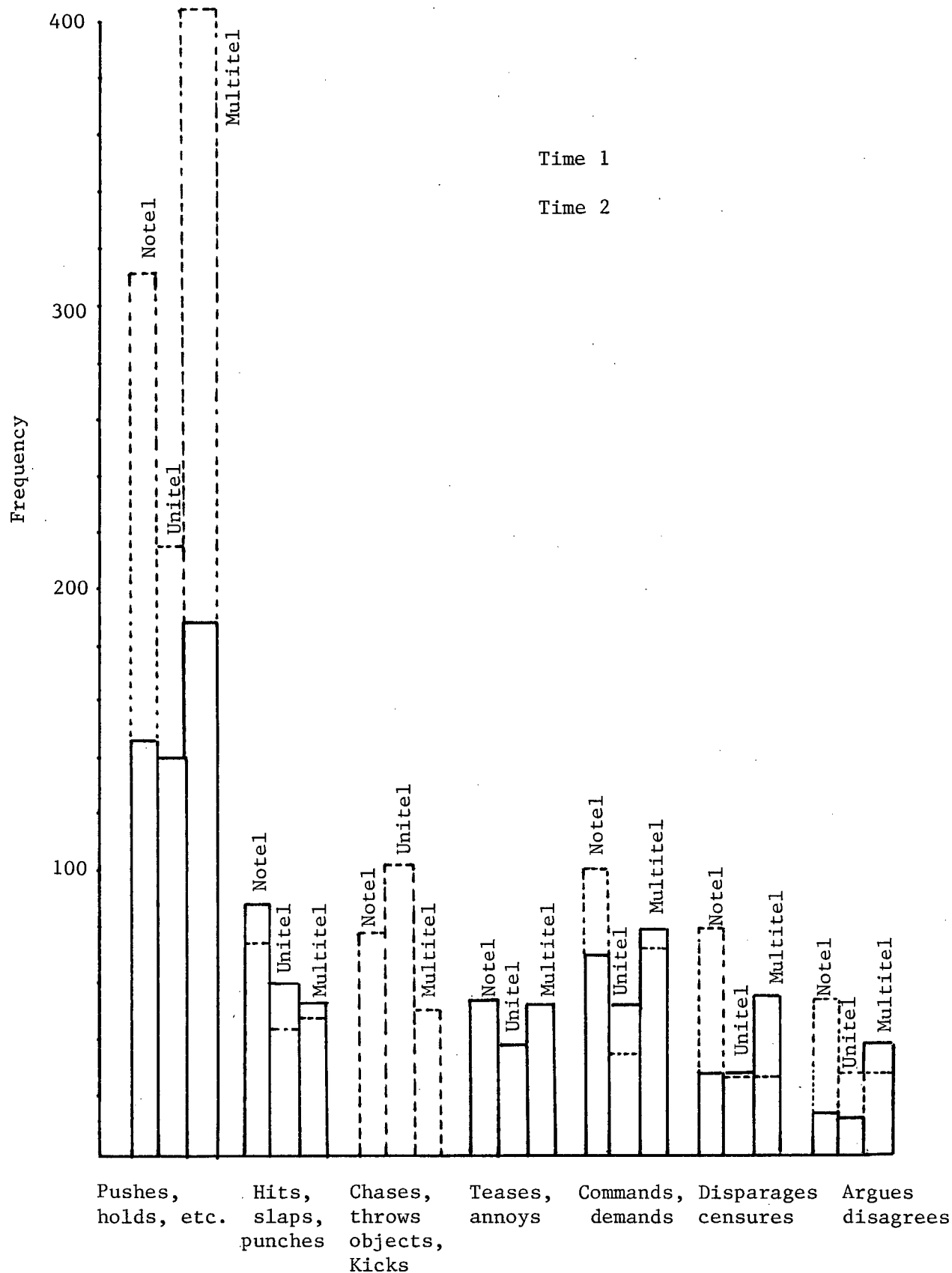


Table 9

Repertoire of the Three Highest Physical and Verbal Aggressive Responses  
at Time 1 and Time 2

(N = 240) Total Count of Behaviours Over 840 Minutes of Observation

Time 1	Physical Aggression		
	Notel	Unitel	Multitel
Pushes; holds; grabs, etc.	144	140	186
Hits; slaps; punches, etc.	86	58	51
Teases; annoys; interferes, etc.	50	39	48

	Verbal Aggression		
	Notel	Unitel	Multitel
Commands; demands, etc.	67	48	74
Disparages; censures, etc.	30	30	48
Argues; disagrees, etc.	15	14	38

Time 2	Physical Aggression		
	Notel	Unitel	Multitel
Pushes; holds; grabs, etc.	311	214	405
Chases	78	100	47
Hits; slaps; punches, etc.	72	42	45

... continued

Table 9 continued

	Verbal Aggression		
	Notel	Unitel	Multitel
Commands; demands, etc.	97	36	69
Disparages; censures, etc.	77	29	29
Argues; disagrees, etc.	53	29	29

---



time 2, the overall pattern of aggressive behaviours was again similar among the three towns, though the actual number of responses had increased in the majority of cases (see Appendix I). The one main difference among the three towns was that instead of the children interfering in the activity of another (the third highest response at time 1), at time 2 the children in Notel were chasing, those in Unitel were throwing objects, and those in Multitel were kicking and tripping each other (see Figure 6). These results then, imply that although there were increases in aggression, for the behaviours observed, the repertoire across time for each town did not change. Furthermore, there were no differences among the towns, at least in terms of the specific behaviours observed in children's free play in the school grounds.

#### 4. Children High and Low in Aggressive Behaviour.

Other researchers have found that children initially high in aggression tend to be most affected by exposure to aggressive models in the media, (e.g., Stein & Friedrich, 1972; Parke et al., 1975). On this basis, the highly aggressive children at time 1 might also be highly aggressive at time 2. To investigate whether this was the case for the children studied in this sample, the median values were calculated for both physical and verbal aggression. The medians were determined separately for each town, based on the data of time 1 subjects. Then, the subsample of longitudinal children's scores were examined in relation to these median values. These median values for the children in each town are shown in Table 10. Only the 44 longitudinal children could be studied in this analysis as aggression scores were required for time 1 and time 2 to calculate any increase or decrease in aggressive

Table 10

## Median Values of Aggression

(Units - Number of Aggressive Incidents per Minute)

	Notel	
	<u>Time 1</u>	<u>Time 2</u>
Physical Aggression	.38	.75
Verbal Aggression	.14	.29
	Unitel	
	<u>Time 1</u>	<u>Time 2</u>
Physical Aggression	.29	.43
Verbal Aggression	.10	.14
	Multitel	
	<u>Time 1</u>	<u>Time 2</u>
Physical Aggression	.48	.58
Verbal Aggression	.24	.14

responding. Each child had two aggressive scores, one for physical aggression and one for verbal aggression. Thus 44 physical aggression scores for time 1 were examined, as were 44 verbal aggression scores. The children were then subdivided on the basis of their scores into two categories: those whose scores were above the median of the entire sample at time 1 for physical aggression, and those whose scores were below the median. Similarly, the children were subdivided into the same two categories for verbal aggression, on the basis of whether their scores were above or below the median. Then, each child's time 2 aggression scores were examined to determine any increase or decrease in aggressive responding.

i) Notel. In Notel, ten of the sixteen longitudinal children observed had physical aggression scores above the sample median at time 1. From time 1 to time 2, the mean increase in physical aggression for these ten children was 0.64; that is, the mean number of physical aggression incidents per minute increased by 0.64. The remaining six children in Notel, whose physical aggression scores were below the median at time 1, also increased in aggression. The mean increase for these six children was 0.86. Therefore, for both those children above the median at time 1 and those below the median, there was a mean increase in physical aggression over time. The increases or decreases in aggressive responding for both physical and verbal aggression for the children in Notel are shown in Tables 11 and 12, also indicated are the children's television viewing hours at time 2.

For verbal aggression, the pattern was similar, though the mean increases across time were smaller. For the ten children whose scores

Table 11

## Physical Aggression - Notel

Children Above/Below the Median at Time 1, Their Increase/Decrease  
in Aggressive Responding at Time 2 and Their Television Viewing  
Hours Per Week at Time 2

Children ABOVE the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	0.592 <sup>a</sup>	-	sick
M	1.714	-	37.5
M	0.334	-	20
M	0.286	-	27
M	-	0.620	27
M	0.762	-	28
M	-	0.238	48
M	0.572	-	27
M	2.952	-	3.5
F	0.000	0.000	13.5

Mean Increase = 0.64

Mean number of hours = 25.72

... continued

Table 11 continued

Children BELOW the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	1.524	-	28
F	0.655	-	25
F	0.381	-	0.0
F	0.552	-	6.5
F	0.810	-	30.5
F	1.238	-	33

Mean increase = 0.86

Mean number of hours = 20.5

---

<sup>a</sup>Units for the increase or decrease of aggressive responding are the number of aggressive responses per minute.

Table 12

## Verbal Aggression - Notel

Children Above/Below the Median at Time 1, Their Increase/Decrease  
in Aggressive Responding at Time 2 and Their Television Viewing  
Hours per Week at Time 2

Children ABOVE the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	0.300 <sup>a</sup>	-	sick
M	0.048	-	20
F	0.095	-	0
M	-	0.095	27
M	-	0.190	28
M	0.095	-	48
M	0.333	-	27
F	-	0.428	30.5
F	0.190	-	13.5
F	0.714	-	33

Mean Increase = 0.1062

Mean number of Hours = 25.56

... continued

Table 12 continued

Children BELOW the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	0.191	-	28
M	0.715	-	37.5
M	0.381	-	27
F	0.302	-	25
F	0.200	-	6.5
M	0.429	-	3.5
Mean Increase = 0.37			Mean Number of Hours = 21.25

---

<sup>a</sup>Units for the increase/decrease of aggressive responding are the number of aggressive responses per minute.

were above the median at time 1, the mean increase at time 2 was 0.106, whereas the mean increase for children whose scores were below the median at time 1, was 0.37. It is important to note that the ten children above the median for physical aggression at time 1, need not necessarily be the same ten children whose scores were above the median for verbal aggression at time 1; that is, the children's physical and verbal scores were examined separately.

Overall, of the 32 scores considered in Notel for both physical and verbal aggression, 26 aggression scores increased (81.3%) over time. This detailed examination of the longitudinal children in Notel supports the significant results of the longitudinal analysis of variance discussed previously, namely, that there was a significant increase in aggression (both physical and verbal) from time 1 to time 2.

Before discussing a similar breakdown of the data for the longitudinal children in the other two towns, it would be appropriate here to discuss the television viewing data collected for the above children in Notel. Examination of the total number of viewing hours per week does not indicate anything conclusive, although it is interesting to note the possibility of a trend; that is, for both physical and verbal aggression, the mean number of viewing hours at time 2 for children whose aggression scores were above the median at time 1, were higher than the mean number of viewing hours for children who were below the median at time 1. This finding is worth noting because this is the only study in which observations of aggressive behaviour have been obtained prior to children's regular television viewing. The data thus bear on the "chicken and egg" question of whether children, who are



more or less aggressive independently of television's effects, watch more or less television when it becomes available. It is apparent, however, that more data are needed before any conclusions can be drawn. Similarly, inconclusive results emerged from inspecting the children's reports of their favourite shows; that is, children who were highly aggressive at time 1 did not select more aggressive shows as their favourites than those children who were not very aggressive. For example, the former group chose Forest Rangers, Partridge Family, The Waltons, Coming Up Rosie, and the latter group picked Partridge Family, All in the Family, Walt Disney, and Forest Rangers. A possible explanation for this lack of differentiation between the two groups of children could be that less highly aggressive shows were available in Notel as the only channel received in this town is CBC. Content analysis research has shown that CBC has less aggressive content than CTV and/or the three major U.S. networks (Williams, Zabrack, & Joy, 1977); for example, CBC shows no animated programmes (cartoons) and only two crime programmes, categories which contain high aggressive content (Gerbner, 1975; Williams et al., 1977) (see Table 2). Therefore, aggressive and less aggressive children in Notel are watching approximately the same kind of television, though the aggressive children appear to spend slightly more time watching television.

ii) Unitel. In Unitel, fifteen children were observed at time 1 and time 2. Of these children, eight had physical aggression scores above the median at time 1. The mean increase in physical aggression from time 1 to time 2 for these children was 0.12. The mean increase for the seven children whose scores were below the median at time 1 was

0.19. Similarly, for verbal aggression, the mean increase for the eight children whose scores were above the median at time 1 was 0.007, whereas the mean increase in aggression for the seven children whose scores were below the median at time 1 was 0.115,

In sum, of the 30 scores considered in Unitel, for both physical and verbal aggression, 17 scores increased (56.7%), and 11 scores decreased from time 1 to time 2. Two scores remained the same. These figures explain in more detail the lack of a significant increase in Unitel from time 1 to time 2 as found in the analyses of variance; that is, the children did not all remain stable with respect to their aggressive behaviour, as could be postulated from the ANOVA results, but instead some children increased in aggressiveness and others decreased. Those children who decreased in aggressive responding from time 1 to time 2 were not necessarily watching less television at time 2 than their peers who increased. In fact, the number of hours spent viewing television each week were very similar for all children (range of 20-37 hours, with one exception -- this child did not watch television at all).

The viewing hours per week of the children in Unitel are shown in Tables 13 and 14 as are the increases and decreases in aggression scores. The tenuous trend proposed for the children in Notel, that children whose scores were above the aggression medians at time 1 were watching more television at time 2, was not upheld. In fact, in Unitel, the opposite was true -- the children whose scores were below the median were spending more time watching television possibly rendering the proposed trend even more tenuous! Inconsistencies again appeared regarding

Table 13

## Physical Aggression - Unitel

Children Above/Below the Median at Time 1, Their Increases/Decreases  
in Aggressive Responding at Time 2 and Their Television Viewing Hours  
Per Week at Time 2

Children ABOVE the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	0.143 <sup>a</sup>	-	31
F	-	0.428	20
M	0.103	-	0
M	0.952	-	23
M	0.000	0.000	20.5
M	0.476	-	37
M	-	0.143	35
F	-	0.143	31

Mean Increase = 0.12

Mean number of Hours = 24.67

... continued

Table 13 continued

Children BELOW the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	0.143	-	23.5
M	0.429	-	25.5
F	0.286	-	27.5
F	-	0.047	31
F	0.048	-	27.5
F	0.285	-	30.5
F	0.191	-	27

Mean Increase = 0.191

Mean Number of Hours = 27.5

---

<sup>a</sup>Units for the increase/decrease of aggressive responding are the number of aggressive responses per minute.

Table 14

## Verbal Aggression - Unitel

Children Above/Below the Median at Time 1, Their Increase/Decrease  
in Aggressive Responding at Time 2 and Their Television Viewing Hours  
at Time 2

Children ABOVE the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	-	0.096	25.5
F	-	0.095	20
F	-	0.095	31
M	-	0.090	0
M	0.667	-	23
M	-	0.048	35
F	-	0.143	30.5
F	-	0.048	31

Mean Increase = 0.0065

Mean Number of Hours = 24.5

... continued

Table 14 continued

Children BELOW the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	0.238	-	31
M	0.095	-	23.5
F	0.095	-	27.5
F	0.095	-	27.5
M	0.142	-	20.5
M	0.000	0.000	37
F	0.143	-	27

Mean Increase = 0.115

Mean Number of Hours = 27.71

children's favourite television programmes. The more aggressive children were not consistently selecting the more aggressive shows in comparison to their non-aggressive peers. This could again be an artifact of the programmes available in Unitel. (Unitel received two different CBC channels from separate transmitters.) For example, one child who was below the median at time 1 and who increased in physical aggression watched approximately 30 hours of television per week at time 2 and her three favourite shows were The Waltons, Beachcombers, and Walt Disney shows in categories which have been found to have relatively low aggressive content. A child who was above the median at time 1 and decreased in physical aggression watched approximately 31 hours per week at time 2 and her favourite shows were Little House on the Prairie, Abbot and Costello, and Bonanza! (The last two shows are in categories which have been found to have relatively high aggressive content.)

iii) Multitel. In Multitel, there were thirteen children who were available for observation at both times. For the 5 children whose scores were above the median at time 1, the mean increase in physical aggression was 0.17, whereas the mean increase in physical aggression for children below the median was 0.29. The 8 children who scored above the median in verbal aggression at time 1 generally decreased in aggression by time 2. (The mean decrease was 0.11) This was an unexpected finding, since in the other towns both physical and verbal aggression increased from time 1 to time 2. Those eight children were the only ones to demonstrate a consistent decrease in aggression over the two years. The five remaining children who were below the median at time 1, had a mean increase of 0.0004, essentially indicating that they

remained stable. However, inspection of individual scores did not illustrate stability for these five children -- two increased in verbal aggression and 3 decreased. The increases and decreases in aggressive scores and mean viewing hours per week are shown for children in Multitel in Tables 15 and 16.

In Multitel, 26 scores were considered for both physical and verbal aggression and of these scores, 13 increased (50%) and 12 decreased from time 1 to time 2. One did not vary. Similar to the data obtained from the Unitel children, these results explain in more detail the lack of a significant increase in aggression obtained from the analyses of variance; that is, some children increased in aggression and others decreased, rather than all the children remaining at the same level.

The information obtained from the television questionnaires was again inconclusive. The children in Multitel reported a greater number of viewing hours per week at time 2 (approximately 40) but whether the child was high or low in aggression did not relate to the number of hours watched, nor was there any consistency with respect to the children's favourite television programmes. For example, the aggressive children picked Partridge Family, cartoons, Six Million Dollar Man, and Happy Days, whereas less aggressive children picked cartoons, Partridge Family, Happy Days, and Hogan's Heroes. This lack of difference among the children in Multitel dispells the explanation offered for the lack of difference in Notel and Unitel children (that there was not enough choice in these latter towns to demonstrate that the aggressive children were watching aggressive shows), as in Multitel there was a wider variety of programmes.



Table 15

## Physical Aggression - Multitel

Children Above/Below the Median at Time 1, Their Increase/Decrease  
in Aggressive Responding at Time 2 and Their Television Viewing Hours  
at Time 2

Children ABOVE the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	0.238	-	38
F	-	0.619	4
M	0.096	-	25.5
M	0.857	-	43
F	0.286	-	34.5

Mean Increase = 0.172

Mean Number of Hours = 29.00

Children BELOW the median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
F	0.047	-	40.5
F	0.179	-	29.5
F	0.000	0.000	16
F	0.107	-	22

... continued

Table 15 continued

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	-	0.239	sick
M	1.000	-	67
M	0.048	-	22
F	1.143	-	54

Mean Increase = 0.286

Mean Number of Hours = 35.86

Table 16

## Verbal Aggression - Multitel

Children Above/Below the Median at Time 1, Their Increase/Decrease  
in Aggressive Responding at Time 2 and Their Television Viewing Hours  
at Time 2

Children ABOVE the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
F	-	0.143	4
F	-	0.238	40.5
F	-	0.060	29.5
F	-	0.571	16
F	-	0.208	22
M	-	0.476	sick
M	-	0.143	67
M	1.000	-	43

Mean Increase = -0.105

Mean Number of Hours = 31.71

i.e., there was an overall DECREASE

... continued

Table 16 continued

Children BELOW the Median at Time 1

Sex	Increase at Time 2	Decrease at Time 2	T.V. Viewing Hours at Time 2
M	0.096	-	38
M	0.048	-	22.5
M	-	0.047	22
F	-	0.048	54
F	-	0.047	34.5

Mean Increase = 0.0004

Mean Number of Hours = 34.8

However, it is interesting to note that only in Notel did children above the median in aggression spend more time viewing television than children below the median. In the other two towns this trend was reversed. Furthermore, one could postulate that if more aggressive shows had been available in Notel, where the children had no previous exposure to television, aggressive children may have selected aggressive shows as their favourites. However, more information is needed about children without previous exposure who have access to a variety of aggressive shows. (It should be noted that though CBC had less aggressive content than CTV, CBS, ABC, or NBC (Williams, Zabrack, & Joy, 1977), there is still aggression displayed on CBC. Therefore Notel and Unitel children were exposed to some aggressive models on television.)

In sum, the data reviewed in this section do not support the findings of some previous research (Stein & Friedrich, 1972; Parke et al., 1975); that is, that children initially high in aggression tend to be most affected by exposure to aggressive models in the media. In the present study, the aggressive behaviour of both aggressive and less aggressive children generally increased over time, with the exception of Multitel children initially high in verbal aggression. A possible explanation for the discrepancy between the results of the present study and previous research may be a difference in methods of data collection. Specifically, in the present study children were observed during free play periods at school, and in addition, they had not been watching television just prior to the observation periods. Previous researchers (e.g., Stein & Friedrich, 1972) observed children immediately after exposure to aggressive models in the schoolroom. Stein and Friedrich's

(1972) findings that less aggressive children do not display an increase in aggressive responding may have occurred because these children were not used to acting aggressively, and thus, might be reluctant to immediately copy a model's behaviour. However, aggressive children may have no hesitation about behaving in an aggressive manner, and consequently, they might copy the model's behaviour sooner, or at least realise that behaving aggressively is acceptable. Over a period of time (for example, two years in the present study), some less aggressive children may also display increased aggression for a number of possible reasons. For example, their aggressive peers also act as aggressive models, and are likely to be more salient models than those on film, since the peer groups are approximately the same age, and the children know each other. In addition, the less aggressive children may use observed aggression in retaliation to the aggressive behaviour of their peers. Finally, children may learn from observing models that aggression is effective and see that it is acceptable (this is especially true for televised aggression, Williams, Zabrack, & Joy, 1977). The messages of effectiveness and acceptability may not be immediately apparent or important to the non-aggressive children as aggression may not be very salient for them. Therefore, if children are not observed immediately after exposure to aggressive models, any differentiation between highly aggressive and less aggressive children may be diffused.

#### Correlations among Measures of Aggression

An advantage of this study was the use of multiple measures of aggression (that is, observations, teacher ratings and peer ratings).

Most previous researchers have employed only one measure of aggression, for example, observations (Stein & Friedrich, 1972), or questionnaires (Schramm et al., 1961) or surveys (Himmelweit et al., 1959). By collecting data from more than one source, cross-validation among the various measures could be assessed, that is, more confidence could be placed in the validity of the measures employed. To this aim, several Pearson product moment correlations were computed on the cross-sectional data. Separate correlations were computed for each town at time 1 and time 2, resulting in a total of 6 correlation matrices. The items correlated were: (a) the two aggression means (Physical and Verbal); (b) four teacher rating sums (i.e., SS1, the teacher rating sum for aggressive, bossy, and hostile scales; SS2, the sum of teacher ratings for the active and loud scales; SS3, the teacher rating sum for the competitive and dominant scales; and SS4, the sum of teacher ratings for the friendly and honest scales); and (c) the five peer rating measures (i.e., peer rating for bossy; fights; talks back to teacher; argues and disagrees; and pushes, shoves, and pokes).

Time 1. Overall, at time 1 (collapsed across all three towns, see Appendix J), of the 55 possible intercorrelations among the various scores, 45 or 81.8% of the correlations were significant at the .05 level or better.<sup>8</sup> Specifically, in Notel, 40 of the 55 correlations were significant. The majority of measures correlated well among themselves and with the other measures, with the exception of the correlations of the peer rating scores with the verbal measure of aggression. It could be appropriate at this point to reiterate that the observational data were considered to be the most valid of the various measures, for

a variety of reasons. Namely, since two observers coded the behaviour, it was possible to calculate interrater reliability. These reliability scores were .89 at time 1 and .80 at time 2. In addition, the observers coded the children's behaviour as it occurred, whereas both the children and the teachers were required to give overall retrospective impressions. Furthermore, as the teachers and children know each other they might have preconceived ideas and expectations of who they thought was aggressive which might influence their perceptions and judgements. The observers would not have any expectations at least initially, and calculating reliability prevented individual perceptions from biasing the data.

In sum, for Notel, the peer and teacher ratings correlated with the physical aggression measure, whereas only teacher ratings correlated with the verbal aggression measure. A possible explanation for the poor correlations among the peer rating scores and the verbal aggression measure might be that children and adults hold different definitions and perceptions of verbal aggression, but not for physical aggression, admittedly a more blatant form of aggression.

In Unitel, at time 1, only 21 of the 55 correlations were significant. Namely, the teacher ratings were poorly correlated with the other measures of aggression. The peer ratings correlated among themselves and with the physical aggression measure, but, again, not with the measure of verbal aggression. It appeared that in Unitel the teachers did not agree with the perception of aggression of either the children or the observers and the children did not base their judgements on verbal aggression.



An examination of the interrelationships in Multitel at time 1 indicated a similar pattern to that obtained for Notel; that is, 36 of the possible correlations were significant. On the whole, the various measures were well correlated with the exception, again, of the correlations of the peer ratings with the verbal aggression measure.

In sum, for time 1, in Notel and Multitel, it appeared that the teachers and children were both sensitive to physical aggression, but the children seemed to overlook verbal aggression. The latter result, which was also true for the Unitel children, might be due to the different definitions for children and adults, as to what constitutes aggression. Perhaps more importantly, the rating scales given to the children were mostly concerned with physical aggression (e.g., who fights the most?; who pushes, shoves, and pokes the most?) thus focusing the children on physical behaviours.

Time 2. At time 2, 38 of the 55 possible correlations (collapsed across all three towns) were significant (see Appendix J). Specifically, in Notel, 26 correlations were significant, a reduction in the number of significant correlations from time 1. Peer and teacher ratings correlated well in most cases, whereas both of these measures correlated poorly with the observational measures of aggression.

In Unitel, 28 of the correlations were significant. The pattern of correlations obtained was very similar to that obtained for Unitel at time 1; that is, the teacher ratings correlated poorly with the other measures of aggression, and the peer ratings did not correlate with the verbal aggression measure. It appeared, again, that the children may be sensitive to physical aggression but not to verbal aggression.

In Multitel, at time 2, 37 of the possible 55 correlations were significant. The peer ratings correlated with the physical aggression measure and moderately well with the verbal aggression measure. Similar to the finding in Unitel, the children seemed sensitive to physical aggression. However, in Multitel, the children seemed to be more aware of verbal aggression.

In sum, at time 2, the teacher ratings in Notel did not correlate with the observational measures of aggression, and in all three towns the peer ratings did not correlate well with the verbal aggression measure (though in Multitel, these correlations were slightly better than in the other two towns). The two facts, that the teacher ratings in Notel did not correlate with the observational measures of aggression and that the peer ratings in Notel did not correlate with the measure of physical aggression, were the only major discrepancies among the correlations from time 1 and time 2. A possible explanation for these discrepancies in Notel could be that both the teacher's and children's tolerance of aggression increased from time 1 to time 2. Therefore, the teachers and children disagreed with the observers, at time 2, as to which children were aggressive and which were not. The observers used the same a priori definitions at both phases of data collection, thus it is unlikely there were changes in the observers' tolerance of aggression or changes in definitions of what is aggression from time 1 to time 2. Television was not new to the people in Unitel or Multitel and therefore their tolerance and definitions of aggression may not have changed from time 1 to time 2, explaining why the patterns of correlations in these two towns were similar at both times.

## DISCUSSION

In previous research, both in the laboratory and in the field, it has been found that in the majority of cases, children exposed to aggressive models, either live or on film, imitate the aggression displayed and their aggressive behavior increases. The results of both the longitudinal and cross-sectional analyses in this study indicates that, on the whole, children in Notel increased in both physical and verbal aggression after the introduction of television to their town. It seems reasonable to attribute this increased aggression to the introduction of new aggressive models in Notel between time 1 and time 2. That is, through exposure to aggressive models, the children's inhibitions against acting in an aggressive manner may have been reduced (Bandura's theory of observational learning, 1969). This conclusion is supported by the results of the analyses of variance; that is, in the analyses of variance for physical aggression and the cross-sectional analysis of variance for verbal aggression, the aggressive behaviour of only Notel children increased significantly over time.

Another possible explanation for the results obtained in this study is that Notel children's lack of familiarity with television enhanced the effects of observing aggression on children's aggressive behaviour. That is, Notel children may have absorbed more of what they watched than children in the other two towns, and thus by time 2 became even more aggressive than children in those towns.

It is also likely that television, in general, had a non-specific energizing effect or disinhibiting effect on the Notel children. Tannenbaum and Zillman (1975) have argued that watching television may

lead to a general state of arousal which may be expressed in an increase in aggressive behaviour. According to Berlyne's (1960) theory concerning the influence of novelty on arousal levels, the Notel children who were not familiar with television would be more aroused than the children in the other two towns and the probability of their expressing aggression would thus be increased. As the novelty of television wears off Notel children's aggressive responding might be expected to decrease to the level of Unitel and Multitel children. However, because of the disinhibiting effect of television, the Notel children's level of aggression would be unlikely to return to that exhibited before the introduction of television.

No relationship was found between children's specific television viewing habits and their aggressive behaviour, and the hypothesis that Notel children's aggressive repertoires would change with the inception of television was not supported.

If the content of television programming was affecting children's specific aggressive behaviours, the repertoire of aggression displayed was expected to vary from time 1 to time 2 in Notel. However, inspection of the repertoire data indicated that the introduction of television to Notel did not alter the children's repertoire. At time 1, the Notel children's aggressive repertoires were not significantly different from those exhibited by the children in the other two towns. Furthermore, there were no major changes in the Notel children's repertoires at time 2. Based on this descriptive analysis there was no evidence that children were learning specific new behaviours from television. However, it is important to note that the children were observed

during free play periods at school. This situation is not one in which specific behaviours seen on television would be likely to be exhibited, although it is certainly a more realistic setting than the laboratory. For example, content analyses have revealed that physical aggression portrayed on television is often in the form of brandishing a weapon, or using an object not intended as a weapon, such as household furniture (Williams et al., 1977). Clearly, such objects are not readily available in the school playground. Even if children had learned these specific behaviours from watching television programmes, it is unlikely that the behaviours would be displayed on the playground. A drawback to this explanation occurs when one considers the use of verbal aggression, which is not restricted to any particular setting. The Notel children's repertoires of verbal aggression did not differ substantially from those displayed in the other towns. A possible explanation for this lack of difference among the three towns in verbal aggression displayed is that children may be more exposed to verbal aggression in their own environments than to physical aggression. That is, not many children have observed men "shooting it out" or car chases in real life, but many children have witnessed people being sarcastic and verbally abusive. What children may learn from the media is that verbal aggression is appropriate and acceptable, so the frequency of verbal aggression increases even though the form does not vary. Of course, this may also occur for physical aggression, which is portrayed as extremely effective (Larsen, Gray, & Fortis, 1968; Williams et al., 1977); negative consequences for aggression are virtually non-existent in television fiction. Thus there was no evidence in the results of the

present study that children learn specific aggressive responses from television. The results do not preclude this possibility, but provide no direct evidence to support it.

The failure to find that highly aggressive children were more affected than less aggressive children by exposure to aggressive models on television adds further support to the suggestion that children learn the acceptability of aggression from television. That is, some less aggressive children, who might not necessarily imitate aggressive behaviour, per se, may learn that this type of behaviour is acceptable and so include it in their play repertoires, especially in retaliation to other children's aggressiveness. Perhaps if television portrayed ways of dealing with aggression other than submission or aggressive retaliation (Williams et al., 1977), children initially less aggressive might remain so.

The analyses of variance (both longitudinal and cross-sectional) indicated that Multitel children's aggression did not increase significantly from time 1 to time 2, although in hypothesis 3 their aggression had been postulated to be higher at time 2. It might be that the Multitel children exhibited a maximum in aggressive responding at time 1 and so further increase was not possible at time 2. However, at time 2, the children in Notel displayed significantly more aggression than the Multitel children, indicating that a higher level of aggressive responding was possible. Given the marked increase in Notel children's aggression following the inception of television, and the lack of a significant increase in Multitel children's aggression, it seems most likely that an arousal effect combined with disinhibition occurred for Notel children

rather than the hypothesized cumulative effect. It would be interesting to return to Notel in the future when the children have become more accustomed to having television, to see whether their level of aggressive responding decreased to the level of the other two towns, as would be predicted from the hypothesis that Notel children's reactions to television were heightened because of their lack of familiarity with it.

The sex differences obtained for the physical aggression in both the longitudinal analysis and the cross-sectional analysis were consistent with previous findings; that is, males were found to be more physically aggressive than females (Feshbach, 1970). The results obtained for verbal aggression were inconclusive. Previous research in this area has also been inconsistent. In this study there was no significant sex difference in verbal aggression in the longitudinal analysis. However, in the cross-sectional analysis, males displayed significantly more verbal aggression at time 2 than females (there was no significant difference at time 1). Examination of the verbal aggression means obtained for both males and females in the longitudinal analysis revealed a trend, consistent with the significant sex difference found in the cross-sectional analysis -- that males were more verbally aggressive than females. The difference in the longitudinal analysis was probably not statistically significant because of the relatively smaller sample size involved (44 subjects, by comparison with 240 in the cross-sectional analysis). The most important finding concerning sex differences was that for physical aggression, which was consistent with most previous research on sex differences and physical aggression. The replication of this well-established finding lends credibility to the other findings

obtained because it indicates that the children studied were not from a substantially different population than children studied in other research on aggression.

One alternative explanation for the results of this study is experimenter bias. It was not possible for the observers to be blind to the towns in which they were observing. However, several aspects of the findings argue strongly against experimenter bias. The two observers at time 1 were naive concerning the specific hypotheses being tested, and did not know that U.S. and Canadian television differ in level of aggression content. The observers at time 2, though unaware of the results obtained at time 1, knew that Notel had received television just after the time 1 observations had been made, and also knew that Notel and Unitel received only CBC whereas Multitel received CBC and several US stations. However, neither observer knew that US networks had been found to contain more aggressive content than Canadian television (Singer, 1970; Williams et al., 1977). Therefore, at time 1, the observers did not expect Multitel children to display the highest level of aggression (i.e., hypothesis 3). And, indeed, this did not occur, indicating additional lack of support for potential experimenter bias. That the aggressive behaviours displayed in all three towns at both phases of data collection were similar was another unexpected finding; it had been hypothesized that the aggressive repertoire in Notel would change with the introduction of aggressive models on television. If experimenter bias had been operating while the data were being collected, the observers would have had to mentally register, while coding, which aggressive responses were the most frequent and remember the order from town to



town. Since experimenter bias often occurs without awareness, it seems unlikely that coders registered and remembered the repertoires without being aware of this process.

Another finding that argues against experimenter bias is that in the majority of cases, teacher ratings and/or peer ratings were significantly correlated with the observational aggression scores, providing validation for the authenticity of the data obtained. The observers could not bias their data to agree with ratings obtained at the time of the observations. In addition, the teachers and children did not know the purpose of the study. Finally, the reliability of the observations (at both time 1 and time 2) was above 80%. To obtain this high reliability, the observers would have had to bias their data in similar ways on individual observations (reliability was calculated intermitantly throughout the observation period as two coders were present in each town).

Since some of the hypotheses were not confirmed , correlations between observations and peer and teacher ratings were positive overall, and high reliability was obtained between observers, this author feels confident that experimenter bias is not a sufficient explanation for the results obtained.

A further possible explanation for the findings has to do with changes between time 1 and time 2 in school personnel. All three elementary schools acquired new principals, and they might have instituted new school rules and attitudes towards aggression. Had this occurred, it would most probably have been restricted to physical aggression. Stricter punishment for fighting in the playground would reduce the

amount of physical aggression exhibited, or, on the other hand, a more lenient attitude might lead to an increase in the amount of aggression displayed. The attitudes of the principals in Notel and Multitel (at time 2) were very similar; roughhousing was allowed unless it appeared that someone was going to get hurt. In Unitel, when the principal was present on the playground (this was not often), the children's aggressive behaviour was dampened. However, in Notel, there was a significant increase in verbal as well as physical aggression. This would be difficult to explain by a change in principals as the concern in the schools revolved only around excessive physical aggression. Furthermore, all schools received new principals but only the aggression in Notel increased significantly over time, and Unitel children were not less aggressive than children in Multitel, as would be predicted on the basis of principal's policies in Unitel. Since the aggressive behaviour of children in Unitel and Multitel did not change significantly from time 1 to time 2, a change of principals in Notel is not a more likely explanation for the increase in aggression displayed than the introduction of television.

Research conducted in the field often leads to inconclusive findings, findings for which causal interpretations cannot, strictly speaking, be made. However, if enough information is collected, the researcher can be more confident in proposing the direction of causation. The author realizes that additional information, that would have been very helpful in interpreting the results of this study, was not collected for practical reasons such as lack of time, limitations of finance, and availability of personnel. For future studies in this area, it is important that

data on parental attitudes be obtained, attitudes concerning punishment of their children's aggression, attitudes towards the use of aggression in solving conflict and attitudes toward the use of television. In addition, more detailed information should be collected concerning the children's activities outside school, for example, comic books read, sports played, the attitude of coaches with regard to aggression while playing, etc.

It would certainly be advantageous to have blind observers, which was impractical in the present study. Similarly, collection of more data during different seasons of the year would be an improvement. For this study the data were collected in the three towns during the winter months. Thus information about children's aggressive behaviour during the summer is unknown.

In addition, the author feels that more accurate data on the children's television viewing habits are needed. The younger children found the television questionnaire difficult, even though it was administered individually by a research assistant. Often these children did not know the name of the programmes they watched, or the number of hours spent viewing. It was only through extensive probing that the researchers ascertained the television viewing habits of the children. This task was made additionally difficult because children attempted to give what they considered to be the "right" answer, even though it had been stressed that there was no right or wrong answer. A possible approach to take in overcoming these difficulties when working with younger children might be to ask them to keep a "television diary" for a two week period, wherein they could check off the programmes as they were

watching television (for the very young children a picture code could be devised). Additionally, the parents could be interviewed about their children's television viewing habits to validate the information obtained from the children. It would be important, however, that the parental information not replace the children's information, as research has indicated that parents are not always good judges of what their children are watching (Greenberg et al., 1971).

In summary, it was found, by observing children at free play, that aggressive behaviour increased significantly during the two years following the introduction of television to Notel, a town previously without television reception. This finding is consistent with previous research showing that exposure to television increases children's aggressive behaviour (e.g., Parke et al., 1975; Eron et al., 1972; Stein & Friedrich, 1971). The observed aggression of children in Unitel and Multitel did not change significantly over time. It is proposed that the substantial increase in aggression displayed by the Notel children occurred because the children were aroused by the novelty of television, and the probability of aggressive responding increased. In addition, because aggression is portrayed on television as acceptable, effective, and appropriate, the likelihood is that children would increase in aggression. It has also been suggested that disinhibition will maintain aggressive responding once the novelty of television has worn off. Evidence of learning specific behaviours from televised models was not found. However, this may have been due to the limitations of the testing situation.

The findings of this study, like the findings of most previous

research, are consistent with the causal statement that exposure to television leads to an increase in aggressive behaviour. This effect does not, of course, occur in a vacuum. A constellation of factors is undoubtedly involved, including the attitudes of parents and other adults toward aggression and the influence of peers. And, adults and peers also learn from television that aggression is an appropriate and effective method of resolving conflict. Thus children's aggressive behaviour may be affected both directly and indirectly by the aggression portrayed on television.

## FOOTNOTES

- <sup>1</sup> The procedure for selecting the three towns was the following: Notel was the initial choice as it lacked television reception; Unitel was selected as a comparable town because it was in approximately the same geographic area, other demographic variables were similar and the Notel residents selected it as a town similar to their own. Multitel was chosen to enable a comparison between the effects of exposure to US television versus exposure to Canadian television.
- <sup>2</sup> The coding scheme employed was a modified form, validated by Joanne McFadden, of Walters, Pearce and Dahms' 1957 scheme.
- <sup>3</sup> The observers coded each child while playing in the playground. Therefore, no child was coded while alone. This meant that though the children saw the observers walking around, they seemed unaware that individual children or behaviours were being coded. Also the observers, though near enough to hear what was being said by the children, tried to give the appearance of looking the other way. The children seemed aware of the observers for the first few days (mainly when the observers were learning the children's names and faces, and no coding was done) but soon began to ignore them, when they realized that the observers were not teachers and wouldn't stop them if they were fighting, etc.
- <sup>4</sup> Interrater reliability was calculated using the following method: the number of agreements were divided by the total number of responses.
- <sup>5</sup> A probability level of  $p < .05$  was considered to reflect a statistically significant finding. However, if a probability level of

$0.1 > p < .05$  was obtained on theoretically important effects these effects were discussed.

<sup>6</sup> Unless otherwise stated, post hoc analyses consisted of:

Tukey A for significant main effects

Simple Main Effects for significant interactions.

<sup>7</sup> The age levels 1, 2, 3, and 4 correspond to grades 1, 2, 4, and 5 at time 1 and grades 1, 2, 3, and 4 at time 2.

<sup>8</sup> For the correlations that are discussed the significance level was  $p < .05$ . In the tables of correlations shown in Appendix J, correlations significant at  $p < .1$  are also shown.

## REFERENCES

- Bandura, A. Influence of model's reinforcement contingencies on the acquisition of imitative responses. Journal of Personality and Social Psychology, 1965, 1, 589-595.
- Bandura, A. Principles of behavior modification. New York: Holt, 1969.
- Bandura, A., Ross, D., & Ross, S.A. Imitation of film-mediated aggressive models. Journal of Abnormal and Social Psychology, 1963a, 66, 3-11.
- Bandura, A., Ross, D., & Ross, S.A. A comparative test of the status envy, social power and secondary reinforcement theories of identificatory learning. Journal of Abnormal and Social Psychology, 1963b, 67, 527-534.
- Baron, R.A. Magnitude of victim's pain cues and level of prior anger arousal as determinants of adult aggressive behaviour. Journal of Personality and Social Psychology, 1971a, 17, 236-243.
- Baron, R.A. Aggression as a function of magnitude of victim's pain cues, level of prior anger arousal and aggressor-victim similarity. Journal of Personality and Social Psychology, 1971b, 18, 48-54.
- Berkowitz, L. Some aspects of observed aggression. Journal of Personality and Social Psychology, 1965, 2, 359-369.
- Berkowitz, L. & Geen, R. Film violence and the cue properties of available targets. Journal of Personality and Social Psychology, 1966, 3, 525-530.
- Berkowitz, L. & Geen, R. Stimulus qualities of the target of aggression: A further study. Journal of Personality and Social Psychology, 1967, 5, 364-368.



- Berkowitz, L., Parke, R.D., Leyens, J., & West, S. The effects of justified and unjustified movie violence on aggression in juvenile delinquents. Journal of Research in Crime and Delinquency,
- Berlyne, D.E. Conflict, arousal, and curiosity. New York: McGraw Hill, 1960.
- Buss, A.H. Instrumentality of aggression, feedback, and frustrations as determinants of physical aggression. Journal of Personality and Social Psychology, 1966, 3, 153-162.
- Chaffee, S.H. Television and adolescent aggressiveness. In G.A. Comstock & E.A. Rubenstein (Eds.), Television and social behaviour vol. 3 Television and adolescent aggressiveness. Washington, D.C.: U.S. Government Printing Office, 1972.
- Chaffee, S.H. & McLeod, J.M. Adolescent television use in the family context. In G.A. Comstock & E.A. Rubinstein (Eds.), Television and social behaviour vol. 3, Television and adolescent aggressiveness. Washington, D.C.: U.S. Government Printing Office, 1972.
- Cline, V.B., Croft, R.G., & Courrier, S. Desensitization of children to television violence. Journal of Personality and Social Psychology, 1973, 27, 360-365.
- Collins, W.A., Berndt, T.J., & Hess, V.L. Observational learning of motives and consequences for television aggression: developmental study. Child Development, 1974, 45, 799-802.
- Drabman, R.S. & Thomas, M.H. Does media violence increase children's toleration of real life aggression? Developmental Psychology, 1974, 10, 418-421.

- Eron, L.D., Huesmann, L.R., Lefkowitz, M. M., & Walder, L. Does television violence cause aggression? American Psychologist, 1972, 27, 253-263.
- Feshbach, S. Aggression. In P.H. Mussen (Ed.), Carmichael's manual of psychology, volume 2. New York: Wiley, 1970.
- Feshbach, S. & Singer, R.D. Television and aggression. San Francisco: Jossey-Bass, 1971.
- Geen, R.G. & Stonner, D. Context effects in observed violence. Journal of Personality and Social Psychology. 1972.
- Gerbner, G. & Gross, L. The scary world of television's heavy viewer. Psychology Today, 1976, 9, 41-45.
- Gerbner, G. & Gross, L. Living with television: The violence profile. Journal of Communication, 1976 (Spring), 173-192.
- Gewirtz, J.L. Deprivation and satiation of social stimuli as determinants of their reinforcing efficacy. In J.P. Hill (Ed.), Minnesota symposia on child psychology, Vol. 1. Minneapolis: University of Minnesota Press, 1967.
- Gordon, D. & Singer, B. Content analysis of the newsmedia: Newspapers and television. Toronto: Ontario Royal Commission on Violence in the Communications Industry, 1977.
- Gordon, J. & Smith, E. Children's aggression, parental attitudes, and the effects of an affiliation arousing story. Journal of Personality and Social Psychology, 1965, 1, 654-659.
- Greenberg, B., Ericson, P., & Vlahos, M. Children's television behaviours as perceived by mother and child. In G.A. Comstock & E.A. Rubinstein (Eds.), Television and social behaviour Vol. 4 Television in day

to day life. Washington, D.C.: U.S. Government Printing Office, 1972.

Hanratty, M.A., Liebert, R.M., Morris, L.W., & Fernandez, L.E. Imitation of film-mediated aggression against live and inanimate victims. Proceedings of the 77th Annual Convention of the American Psychological Association. Washington, D.C.: American Psychological Association, 1969, 457-458.

Hicks, D.J. Imitation and retention of film-mediated aggressive peer and adult models. Journal of Personality and Social Psychology, 1965, 2, 97-100.

Himmelweit, H., Oppenheim, A.N., & Vince, P. Television and the child: An empirical study of the effects of television on the young. London: Oxford University Press, 1958.

Klapper, J.T. The impact of viewing 'aggression'. Studies and problems of extrapolation. In O.N. Larsen (Ed.), Violence and the mass media. New York: Harper Row, 1968.

Liebert, R. Television and social learning. Some relationships between viewing violence and behaving aggressively. (An overview). In G.A. Comstock & E.A. Rubinstein (Eds.), Television and social behaviour Vol. 2. Television and social learning. Washington, D.C.: U.S. Government Printing Office, 1972.

Liebert, R.M., Sobol, M.D., & Davidson, E.S. Catharsis of aggression among institutionalized boys: Fact or artifact. In G.A. Comstock & E.A. Rubinstein (Eds.), Television and social behaviour Vol. 5. Television effects. Further explorations. Washington, D.C.: U.S. Government Printing Office, 1972.

- Liebert, R.M., Neale, J., & Davidson, E.S. The early window. Effects of television on children and youth. New York: Pergamon Press Inc., 1973.
- Liefer, A.D. & Roberts, D.F. Children's responses to television violence. In J.P. Murray, E.A. Rubinstein, & G.A. Comstock (Eds.), Television and social behaviour. Vol. 2. Television and social learning. Washington, D.C.: U.S. Government Printing Office, 1972.
- Leyens, J., Camino, L., Parke, R., & Berkowitz, L. The effects of movie violence on aggression in a field setting as a function of group dominance and cohesion. Journal of Personality and Social Psychology, 1975, 32, 346-360.
- Milgram, S. Some conditions of obedience and disobedience to authority. Human Relations, 1965, 18, 57-76.
- Nelson, J.D., Gelfand, D.M., & Hartmann, D. Children's aggression following competition and exposure to an aggressive model. Child Development, 1969, 40, 1085-1097.
- Parke, R., Berkowitz, L., Leyens, J., West, S., & Sebastian, R. Film violence and aggression: A field experimental analysis. Unpublished manuscript, 1975.
- Singer, B.D. Violence, protest and war in television news: The U.S. and Canada compared. Public Opinion Quarterly, 1970-71, 34, 611-616.
- Schramm, W., Lyle, J., & Parker, E.B. Television in the lives of our children. Stanford, California: Stanford University Press, 1961.
- Stein, A.H. & Friedrich, L.K. TV content and young children's behaviour.

- In G.A. Comstock & E.A. Rubinstein (Eds.), Television and social behaviour Vol. 5. Television effects: Further explorations. Washington, D.C.: U.S. Government Printing Office, 1972.
- Stein, A.H. & Friedrich, L.K. Impact of television on children and youth. In E.M. Hetherington, J.W. Heen, R. Kron, & A.H. Stein. Review of child development research, vol. 5. Chicago: University of Chicago Press, 1975.
- Steuer, F.B., Applefield, J.M., & Smith, R. Televised aggression and the interpersonal aggression of preschool children. Journal of Experimental Child Psychology, 1971, 11, 442-447.
- Tannenbaum, P.H. & Zillmann, D. Emotional arousal in the facilitation of aggression through communication. In L. Berkowitz (Ed.), Advances in experimental social psychology, Vol. 8. New York: Academic Press, 1975.
- Tedeschi, J., Smith, R., & Brown, R. A reinterpretation of research on aggression. Psychological Bulletin, 1974, 81, 540-562.
- Walters, J., Pearce, D., & Dahms, L. Affectional and aggressive behaviour of preschool children. Child Development, 1957, 28, 14-28.
- Walters, R.H. & Brown, M. Studies of reinforcement of aggression. Transfer of responses to an interpersonal situation. Child Development, 1963, 34, 563-571.
- Wells, W.D. Television and aggression: Replication of an experimental field study. Unpublished manuscript, University of Chicago, 1973.
- Williams, J.F., Meyerson, J.L., Eron, L., & Semler, I.J. Peer-rated aggression and aggression responses elicited in an experimental

situation. Child Development, 1967, 38, 181-189.

Williams, T.M., Zabrack, M.L., & Joy, L.A. A content analysis of  
entertainment television programming. Toronto: Ontario Royal  
Commission on Violence in the Communications Industry, 1977.

## APPENDIX A

## Peer Ratings

Your name \_\_\_\_\_

Your age \_\_\_\_\_

Your grade \_\_\_\_\_

Your school \_\_\_\_\_

In the space below, name the three children in your class who are the bossiest:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_



In the spaces below, name the three children in your class who get into fights the most:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

In the spaces below, name the three children in your class who talk back to the teacher the most:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

In the spaces below, name the three children in your class who argue and disagree with the other children the most:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

In the spaces below, name the three children in your class who push, shove and poke other children the most:

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

## APPENDIX B

## Teacher's Ratings

Please rate each child in your class on the following personality traits by circling the X which most closely corresponds to your opinion about that child.

NAME OF CHILD \_\_\_\_\_

## 1. Active

X	X	X	X	X	X	X
Very						Not at all

## 2. Aggressive

X	X	X	X	X	X	X
Very						Not at all

## 3. Argumentative

X	X	X	X	X	X	X
Very						Not at all

## 4. Bossy

X	X	X	X	X	X	X
Very						Not at all

## 5. Competitive

X	X	X	X	X	X	X
Very						Not at all

## 6. Dominant

X	X	X	X	X	X	X
Very						Not at all

## 7. Friendly

X	X	X	X	X	X	X
Very						Not at all

## 8. Honest

X	X	X	X	X	X	X
Very						Not at all

## 9. Hostile

X	X	X	X	X	X	X
Very						Not at all

## 10. Loud

X	X	X	X	X	X	X
Very						Not at all

## APPENDIX C

CHILDREN'S TV INTERVIEWFORM M-V  
Card 1

NAME: \_\_\_\_\_  
 I.D.: \_\_\_\_\_  
 AGE: \_\_\_\_\_  
 SEX (1) Male \_\_\_\_\_ (2) Female \_\_\_\_\_

1  
 2-5  
 6-7  
 8

1. Do you have a television set at home?

\_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 14]

9

2. How many T.V. sets do you have at home?  
 \_\_\_\_\_ sets

10

3. Is it (are they) working or broken?

\_\_\_\_\_ (1) all work [SKIP TO QUESTION 5]  
 \_\_\_\_\_ (2) at least one works [SKIP TO QUESTION 5]  
 \_\_\_\_\_ (3) none work

11

4. How long has it (have they) been broken?

\_\_\_\_\_ (1) less than a week  
 \_\_\_\_\_ (2) a week or so  
 \_\_\_\_\_ (3) a month or so  
 \_\_\_\_\_ (4) more than a month [SKIP TO QUESTION 14]

12

5. How many hours of television do you usually watch on

(a) weekdays before school? \_\_\_\_\_ x 5 = \_\_\_\_\_  
 (b) weekdays after school? \_\_\_\_\_ x 5 = \_\_\_\_\_  
 (c) weekdays after supper? \_\_\_\_\_ x 5 = \_\_\_\_\_  
 (d) Saturday? \_\_\_\_\_  
 (e) Sunday? \_\_\_\_\_

13,14  
 15,16  
 17,18  
 19,20  
 21,22

6. (a) Yesterday at lunch time did you watch T.V.?

\_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 7]

23

(b) Did you watch the Bob McLean Show, the Noon Show or something else yesterday at lunch time?

\_\_\_\_\_ (1) The Bob McLean Show  
 \_\_\_\_\_ (2) The Noon Show  
 \_\_\_\_\_ (3) Other [SPECIFY]  
 \_\_\_\_\_

24,25

7. (a) Yesterday after school did you watch T.V.?

\_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 8]

26

(b) [IF YES, SELECT THE APPROPRIATE DAY THEN SAY] I'm going to read a list of shows that were on TV yesterday after school. Tell me which ones you watched. Did you watch:

....

Monday

Abbott and Costello	27
Comin' Up Rosie	28
Forest Rangers	29
Hi Diddle Day	30
Partridge Family	31
Other [SPECIFY]	32

Wednesday

Abbott and Costello	39
Comin' Up Rosie	40
Forest Rangers	41
Partridge Family	42
World Series Baseball game	43
Other [SPECIFY]	44

Tuesday

Abbott and Costello	33
Animation Pie	34
Electric Company	35
Forest Rangers	36
Partridge Family	37
World Series Baseball game	38
Other [SPECIFY]	

Thursday

Abbott and Costello	45
Forest Rangers	46
Partridge Family	47
Vision On	48
What's New	49
Other [SPECIFY]	50

(a) Did you watch T.V. last night after supper?

(1) Yes

51

(2) No [SKIP TO QUESTION 9]

(b) [IF YES, SELECT THE APPROPRIATE DAY THEN SAY] Which shows did you watch last night?

Did you watch:

Monday

All in the Family	52
Barney Miller	53
Carefree Cooking	54
Chico and the Man	55
Front Page Challenge	56
Hourglass	57
News Magazine	58
People of our Time	59
SPECIAL - "Your a Sport Charlie Brown"	60
The National News	61
Movie "Fear no Evil"	62
Other [SPECIFY]	63,64

Tuesday

Bob Newhart	65
Celebration	66
Doctor's Hospital	67
Fifth Estate	68
Happy Days	69
Hourglass	70
Phyllis	71
This is the Law	72
The National News	73
Movie "Bellissima"	74
Other [SPECIFY]	75,76

Wednesday

Col.  
Card 2

SPECIAL "Earthwatch"	6
Hourglass	7
Little House on the Prairie	8
Nature of Things	9
Nobel Prize Laureate	10
Movie "Escape to Mindanao"	12
Other [SPECIFY]	13,14

Thursday

Cannon	15
Carole Burnett	16
House of Pride	17
Hourglass	18
King of Kensington	19
Movin' On	20
Some of My Best Friends are Men	21
Space 1999	22
Watson Report	23
The National	24
Movie "The Tin Star"	25
Movie "The Brides of Dracula"	26
Other [SPECIFY]	27,28

9. (a) Did you watch T.V. this morning before school?

- \_\_\_\_ (1) Yes  
 \_\_\_\_ (2) No [SKIP TO QUESTION 10]

29

(b) What shows did you watch this morning?

- \_\_\_\_ Col.  
 1. \_\_\_\_\_ 30  
 2. \_\_\_\_\_ 31  
 3. \_\_\_\_\_ 32

10. (a) Do your parents ever keep you from watching something on television that you want to watch?

- \_\_\_\_ (1) Yes  
 \_\_\_\_ (2) No [SKIP TO QUESTION 11]

35

(b) How often would you say this happens:

- \_\_\_\_ (1) often,  
 \_\_\_\_ (2) once in a while, or  
 \_\_\_\_ (3) hardly ever?

36

(c) What are the reasons your parents usually have for not letting you watch?

- \_\_\_\_ (1) haven't done homework  
 \_\_\_\_ (2) haven't done chores  
 \_\_\_\_ (3) parents disapprove of content  
 \_\_\_\_ (4) parents want to watch something else  
 \_\_\_\_ (5) other [SPECIFY]

\_\_\_\_\_  
 \_\_\_\_\_

37

(d) Can you think of any times in the past two weeks that your parents wouldn't let you watch a show that you wanted to see?

<u>Name of show</u>	<u>Reason</u>	
(1) _____	_____	38
(2) _____	_____	39
(3) _____	_____	40
(4) _____	_____	41
(5) _____	_____	42

11. Most evenings do you watch T.V. alone or with others?

- \_\_\_\_ (1) alone  
 \_\_\_\_ (2) with others [SPECIFY] \_\_\_\_\_

43

12. What channels do you get on your T.V.?

- \_\_\_\_ (1) channel 2 only  
 \_\_\_\_ (2) channel 6 only [SKIP TO QUESTION 14]  
 \_\_\_\_ (3) channels 2 and 6  
 \_\_\_\_ (4) other [SPECIFY]

44



13. If there are two different shows on at the same time, one on Channel 2 and one on Channel 6, who gets to choose which one to watch?
- \_\_\_\_\_ (1) parents decide  
 \_\_\_\_\_ (2) subject chooses  
 \_\_\_\_\_ (3) older sibs choose  
 \_\_\_\_\_ (4) parents and children take turns choosing shows  
 \_\_\_\_\_ (5) some of us watch on another T.V. set  
 \_\_\_\_\_ (6) other [SPECIFY] \_\_\_\_\_ 45
14. [FOR THOSE WHO DO NOT HAVE A WORKING T.V. AT HOME: ALL OTHERS SKIP TO QUESTION 15]
- (a) If you haven't got a working television at home, do you watch T.V. elsewhere?
- \_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 20] 46
- (b) How often do you watch T.V.? [PROBE TO ASCERTAIN FREQUENCY, DURATION AND LOCATION, E.G. TWICE A WEEK FOR 2 HOURS AFTER SCHOOL AT MY FRIEND'S HOUSE]
- Frequency: \_\_\_\_\_ 47  
 Duration: \_\_\_\_\_ 48  
 Location: \_\_\_\_\_ 49
15. (a) What is your #1 favorite T.V. show?
- \_\_\_\_\_ 50,51
- (b) When is it on?
- \_\_\_\_\_ 52
- (c) What are your four next most favorite shows?
1. \_\_\_\_\_ 53,54  
 2. \_\_\_\_\_ 55,56  
 3. \_\_\_\_\_ 57,58  
 4. \_\_\_\_\_ 59,60
16. (a) Do you usually watch T.V. in the morning before school?
- \_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 17] 61
- (b) Which of these shows do you usually watch?
- \_\_\_\_\_ University of the Air 62  
 \_\_\_\_\_ B.C. AM - Morrier 63  
 \_\_\_\_\_ Canada AM 64  
 \_\_\_\_\_ Romper Room 65  
 \_\_\_\_\_ Other [SPECIFY] \_\_\_\_\_ 66
17. (a) Do you usually watch T.V. after School?
- \_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 18] 67

(b) Which shows do you usually watch?

_____	Abbott and Costello	68
_____	Animation Pie	69
_____	Comin' Up Rosie	70
_____	Electric Company	71
_____	Flaxton Boys	72
_____	Forest Rangers	73
_____	Hi Diddle Day	74
_____	Partridge Family	75
_____	Vision On	76
_____	What's New	77
_____	Other [SPECIFY] _____	78,79

18. (a) Do you usually watch T.V. in the evenings after supper?

- \_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 19] 80

(b) Which of these shows do you usually watch?

Card 3

_____	All in the Family	6	_____	Nature of Things	33
_____	Barney Miller	7	_____	News Magazine	34
_____	Bob Newhart	8	_____	Nobel Prize Laureate	35
_____	CFJC Reports	9	_____	On the Rocks	36
_____	CFL Football	10	_____	Onedin Line	37
_____	Cannon	11	_____	People of Our Time	38
_____	Carefree Cooking	12	_____	Phyllis	39
_____	Carol Burnett	13	_____	Police Story	40
_____	Celebration	14	_____	Reach for the Top	41
_____	Chico and the Man	15	_____	Some of My Best Friends	
_____	Doctor's Hospital	16	_____	Are Men	42
_____	Fifth Estate	17	_____	Tommy Hunter	43
_____	Front Page Challenge	18	_____	This is the Law	44
_____	Happy Days	19	_____	Take Time	45
_____	Hockey Night in Canada	20	_____	Waltons	46
_____	Hourglass	21	_____	Wonderful World of Disney	47
_____	House of Pride	22	_____	The National News	48
_____	Howie Meeker's Hockey		_____	Monday Night Movie	49
_____	School	23	_____	Tuesday Night Movie	50
_____	Irish Rovers	24	_____	Wednesday Night Movie	51
_____	King of Kensington	25	_____	Thursday Night Movie	52
_____	Klahanie	26	_____	Friday Night Movie	53
_____	Little House on the		_____	Saturday Night Movie	54
_____	Prairie	27	_____	Sunday Night Movie	55
_____	Mary Tyler Moore	28			
_____	M.A.S.H.	29			
_____	Mr. Chips	30			
_____	Monty Python's Back	31			
_____	Movin' On	32			

19. (a) Do you usually watch T.V. on Saturday morning?

- \_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 20] 57

(b) Which of these shows do you watch?

- ☐ The French shows (e.g. Le Petite Semaine; Le 60; Sol et Gobelet) 58  
☐ Peanuts and Popcorn 59  
☐ CFL football 60  
☐ Other [SPECIFY] 61  


---



---

0. (a) Do you listen to the radio

- ☐ (1) often  
☐ (2) sometimes, or  
☐ (3) almost never? [SKIP TO QUESTION 21] 62

(b) When do you usually listen to the radio?

- ☐ (1) in the morning before school  
☐ (2) after school  
☐ (3) in the evenings after supper  
☐ (4) on Saturday or Sunday  
☐ (5) other [SPECIFY] 63,64  


---

(c) What kinds of programs do you usually listen to on the radio?

- ☐ (1) music  
☐ (2) news  
☐ (3) hockey or football games  
☐ (4) other [SPECIFY] 65,66  


---

21. (a) Outside of school, about how many books do you read a month?

- ☐ 

---

 67,68

(b) Do you ever check books out of your school library or the public library?

- ☐ (1) Yes  
☐ (2) No [SKIP TO QUESTION 22] 69

(c) About how often do you check books out of a library?

- ☐ (1) once a week  
☐ (2) 2-3 times a month  
☐ (3) once a month  
☐ (4) a few times a year 70

22. Do you ever read magazines?

- ☐ (1) Yes  
☐ (2) No [SKIP TO QUESTION 23] 71

(b) What magazines do you read?

- ☐ 

---

 72,73

(c) About how often do you read a magazine?

- ☐ (1) once a week or more  
☐ (2) 2-3 times a month  
☐ (3) once a month  
☐ (4) a few times a year 74

23. (a) Do you ever read comic books?  
       ☐ (1) Yes  
       ☐ (2) No [SKIP TO QUESTION 24] 75
- (b) What are your favorite comic books?  
   1. \_\_\_\_\_ 76  
   2. \_\_\_\_\_ 77  
   3. \_\_\_\_\_ 78
- (c) About how often do you read a comic book?  
       ☐ (1) once a week or more  
       ☐ (2) 2-3 times a month  
       ☐ (3) once a month  
       ☐ (4) a few times a year 79
24. Do you ever read: Card 4
- (a) [VALEMOUNT ONLY] The Canoe Mountain Echo?  
       ☐ (1) Yes  
       ☐ (2) No 6
- (b) [McBRIDE ONLY] The Robson Valley Courier?  
       ☐ (1) Yes  
       ☐ (2) No 7
- (c) What about other newspapers? Do you ever read a newspaper from Vancouver,  
       Kamloops, Prince George, etc.?  
       ☐ (1) Yes  
       ☐ (2) No 8
- (d) About how often would you say you read a newspaper of any kind?  
       ☐ (1) everyday  
       ☐ (2) a few times a week  
       ☐ (3) once a week  
       ☐ (4) 1-3 times a month  
       ☐ (5) a few times a year  
       ☐ (6) never 9
5. How do you usually find out about the news?  
       ☐ (1) from the radio  
       ☐ (2) from T.V.  
       ☐ (3) from a newspaper  
       ☐ (4) from a magazine  
       ☐ (5) from my parents  
       ☐ (6) other [SPECIFY] 10

26. How old were you when your family moved to [McBRIDE] [VALEMOUNT]?  
\_\_\_\_\_ years

11

[IF BORN IN TOWN WRITE "ZERO"]

27. [McBRIDE ONLY]. Most people in McBride only got T.V. two years ago.  
Did you watch T.V. before the new transmitter came?

\_\_\_\_\_ (1) Yes

\_\_\_\_\_ (2) No [END]

12

(b) Where did you watch T.V. before the new transmitter came?

\_\_\_\_\_  
\_\_\_\_\_

13

## APPENDIX D

CHILDREN'S MEDIA INTERVIEW

FORM 3

NAME: _____	1
I.D.: _____	2-5
AGE: _____	6-7
SEX (1) Male _____ (2) Female _____	8
<hr/>	
1. Do you have a television set at home?	9
_____ (1) Yes	
_____ (2) No [SKIP TO QUESTION 14]	
2. How many TV sets do you have at home?	10
_____ sets	
3. Is it (are they) working or broken?	11
_____ (1) all work [SKIP TO QUESTION 5]	
_____ (2) at least one works [SKIP TO QUESTION 5]	
_____ (3) none work	
4. How long has it (have they) been broken?	12
_____ (1) less than a week	
_____ (2) a week or so	
_____ (3) a month or so	
_____ (4) more than a month [SKIP TO QUESTION 14]	
5. How many hours of television do you usually watch on	
(a) weekdays before school? _____ x 5 = _____	13-16
(b) weekdays after school? _____ x 5 = _____	17-20
(c) weekdays after supper? _____ x 5 = _____	21-24
(d) Saturday? _____	25-28
(e) Sunday? _____	29-32
6. (a) Yesterday at lunch time did you watch TV?	
_____ (1) Yes	
_____ (2) No [SKIP TO QUESTION 7]	33

(b) [If yes, then ask] which shows did you watch yesterday  
at lunch time? Did you watch

_____ All my children	34
_____ As the world turns	35
_____ Bob McLean	36
_____ CBC news	37
_____ Days of our lives	38
_____ Dialing for dollars	39
_____ Edge of night	40
_____ Q6 Kaleidoscope	41
_____ Other	42-44
_____	45-47
_____	48-50
_____	51-53

7. (a) Yesterday after school did you watch TV?

- \_\_\_\_\_ (1) Yes
- \_\_\_\_\_ (2) No [SKIP TO QUESTION 8] 54

(b) [IF YES, SELECT THE APPROPRIATE DAY THEN SAY]

I'm going to read a list of shows that were on TV yesterday after  
school. Tell me which ones you watched. Did you watch:

<u>Monday</u>	<u>Col.</u>	<u>Tuesday</u>	<u>Col.</u>
_____ Somerset	55	_____ Somerset	12
_____ Guiding Light	56	_____ Guiding Light	13
_____ Take 30	57	_____ Take 30	14
_____ General Hospital	58	_____ General Hospital	15
_____ Bewitched	59	_____ Bewitched	16
_____ Big money movie	60	_____ Big money movie	17
_____ Celebrity cooks	61	_____ Celebrity cooks	18
_____ Happy days	62	_____ Happy Days	19
_____ Merv Griffin	63	_____ Merv Griffin	20
_____ Forest Rangers	64	_____ Forest Rangers	21
_____ Family Affair	65	_____ Family Affair	22
_____ Comin' Up Rosie	66	_____ Electric Company	23
_____ Mickey Mouse	67	_____ Mickey Mouse	24
_____ Hogan's Heroes	68	_____ Hogan's Heroes	25
_____ Hi Diddle Day	69	_____ Just for fun	26
_____ Superman	70	_____ Superman	27
_____ Q-6 Eyewitness news	71	_____ Q-6 Eyewitness news	28
_____ News scene	72	_____ News scene	29
_____ Partridge family	73	_____ Partridge family	30
_____ Channel 2 news	74	_____ Channel 2 news	31
_____ Other _____	75-77	_____ Other _____	32-34
_____	78-80	_____	35-37

\_\_\_\_\_ 6-8  
 \_\_\_\_\_ 9-11

\_\_\_\_\_ 38-40  
 \_\_\_\_\_ 41-43

<u>Wednesday</u>	<u>Col.</u>
_____ Somerset	44
_____ Guiding Light	45
_____ Take 30	46
_____ General Hospital	47
_____ Bewitched	48
_____ Big money movie	49
_____ Celebrity cooks	50
_____ Happy days	51
_____ Merv Griffin	52
_____ Forest Rangers	53
_____ Family affair	54
_____ Comin' Up Rosie	55
_____ Mickey Mouse	56
_____ Hogan's Heroes	57
_____ Nic and Pic	58
_____ Superman	59
_____ Q-6 Eyewitness news	60
_____ Newscene	61
_____ Partridge Family	62
_____ Channel 2 News	63
_____ Other	64-66
_____	67-69
_____	70-72
_____	73-75

<u>Thursday</u>	<u>Col.</u>
_____ Somerset	76
_____ Guiding Light	77
_____ Take 30	78
_____ General Hospital	79
_____ Bewitched	80
_____ Big money movie	6
_____ Celebrity cooks	7
_____ Happy days	8
_____ Merve Griffin	9
_____ Forest Rangers	10
_____ Family Affair	11
_____ Vision on	12
_____ Mickey Mouse	13
_____ Hogan's Heroes	14
_____ What's new	15
_____ Superman	16
_____ Q-6 Eyewitness news	17
_____ Newscene	18
_____ Partridge Family	19
_____ Channel 2 news	20
_____ Other	21-23
_____	24-26
_____	27-29
_____	30-32

8. (a) Did you watch TV last night after supper

33

\_\_\_\_\_ (1) Yes

\_\_\_\_\_ (2) No

(b) [If yes, select the appropriate day then say] which shows did you watch last night? Did you watch:

<u>Monday</u>	<u>Col.</u>
_____ NBC News	34
_____ CBC news	35
_____ Klahanie	36
_____ NFL football	37
_____ To tell the truth	38
_____ Dinah	39
_____ Hourglass	40
_____ Truth or consequences	41
_____ Don Adam's screen test	42
_____ Good times	43
_____ Reach for the top	44

<u>Tuesday</u>	<u>Col.</u>
_____ NBC News	77
_____ CBC News	78
_____ Barney Miller	79
_____ ABC news	80
_____ To tell the truth	6
_____ Dinah	7
_____ Hourglass	8
_____ Brady Bunch	9
_____ Truth or consequences	10
_____ Adam 12	11
_____ Candid Camera	12



NBC white paper	45
Rhoda	46
Front page challenge	47
Phyllis	48
All in the family	49
Olympic games preview	50
Chico and the man	51
Maude	52
Canadian Realists	53
The American assassins	54
FBI	55
Man alive	56
Q-6 eyewitness news	57
News scene	58
CBC news	59
Channel 2 news	60
Tonight show-Johnny Carson	61
CBS movie, "Come fly with me"	62-63
Local news	64
Other	65-67
	68-70
	71-73
	74-76

Hee Haw	13
Celebration	14
Let's make a deal	15
Movin' on	16
Happy days	17
Joe and sons	18
This is the law	19
Welcome back Kotter	20
Police woman	21
Mash	22
5th estate	23
The Rookies	24
One day at a time	25
Family theatre	26
Joe Forrester	27
Marcus Welby	28
Switch	29
Q-6 Eyewitness news	30
News scene	31
CBC news	32
Channel 2 news	33
Tonight show-Johnny Carson	34
CBC movie, "Cry Panic"	35-36
Local news	37
Wide World of Mystery	38
Other	39-41
	42-44
	45-47
	48-50

Wednesday

NBC news	51
CBS news	52
Bob Switzer	53
ABC news	54
To tell the truth	55
Dinah	56
Hourglass	57
Brady Bunch	58
Truth or consequences	59
Adam 12	60
Irish Rovers	61
Bob Newhart	62
Hollywood Squares	63
Little house on the prairie	64
Tony Orlando and Dawn	65
This land	66
When things were rotten	67
Musicamera	68
That's my Mama	69
Count of Monte Cristo	70
Cannon	71

Thursday

NBC news	23
CBS news	24
Sportscene	25
ABC news	26
To tell the truth	27
Dinah	28
Hourglass	29
Brady Bunch	30
Truth of consequences	31
Adam 12	32
Match game	33
Hockey	34
Let's make a deal	35
Sanford & Son	36
Grady	37
Waltons	38
Barney Miller	39
The cop and the kid	40
On the rocks	41
Medical story	42
Hawaii 5-0	43

<input type="checkbox"/> Baretta	72
<input type="checkbox"/> The blue knight	73
<input type="checkbox"/> Upstairs Downstairs	74
<input type="checkbox"/> Starski & Hutch	75
<input type="checkbox"/> Q-6 Eyewitness news	76
<input type="checkbox"/> Newscene	77
<input type="checkbox"/> The National	78
<input type="checkbox"/> Channel 2 news	79
<input type="checkbox"/> Tonight show	80
<input type="checkbox"/> CBC movie "Tribute to a Bad Man"	
	6-7
<input type="checkbox"/> Movie	9-10
<input type="checkbox"/> Other	11-13

<input type="checkbox"/> Streets of San Francisco	44
<input type="checkbox"/> Watson report	45
<input type="checkbox"/> Barnaby Jones	46
<input type="checkbox"/> Harry O	47
<input type="checkbox"/> Peep show	48
<input type="checkbox"/> Q-6 Eyewitness news	49
<input type="checkbox"/> Newscene	50
<input type="checkbox"/> National	51
<input type="checkbox"/> Channel 2 news	52
<input type="checkbox"/> Tonight show	53
<input type="checkbox"/> CBS movie "Heaven with a gun"	54-55
<input type="checkbox"/> Local news	56
<input type="checkbox"/> Mannix	57
<input type="checkbox"/> Longstreet	58
<input type="checkbox"/> Other	59-61
	62-64
	65-67
	68-70

9. (a) Did you watch T.V. this morning before school?

☐ (1) Yes

☐ (2) No [SKIP TO QUESTION 10]

71

(b) [IF YES, SELECT THE APPROPRIATE DAY THEN SAY] Which shows did you watch this morning? Did you watch -

<u>Tuesday</u>	<u>Col</u>
<input type="checkbox"/> Q-6 Farm and Home Report	72
<input type="checkbox"/> Idea Thing	73
<input type="checkbox"/> Consultation	74
<input type="checkbox"/> Farm Reports	75
<input type="checkbox"/> Not for Women Only	76
<input type="checkbox"/> Sunrise Semester	77
<input type="checkbox"/> Sacred Heart	78
<input type="checkbox"/> Intersect	79
<input type="checkbox"/> Today Show	80
<input type="checkbox"/> New Zoo Revue	6
<input type="checkbox"/> Agriculture Today	7
<input type="checkbox"/> CBS Morning News	8
<input type="checkbox"/> Cartoons	9
<input type="checkbox"/> Captain Kangaroo	10
<input type="checkbox"/> Q-6 Eyewitness News	11
<input type="checkbox"/> Munsters	12
<input type="checkbox"/> Other	13-15
	16-18
	19-21
	22-24

<u>Wednesday</u>	<u>Col</u>
<input type="checkbox"/> Q-6 Farm and Home Report	25
<input type="checkbox"/> Idea Thing	26
<input type="checkbox"/> Consultation	27
<input type="checkbox"/> Farm Reports	28
<input type="checkbox"/> Not for Women Only	29
<input type="checkbox"/> Sunrise Semester	30
<input type="checkbox"/> 8 Lively Arts	31
<input type="checkbox"/> Today Show	32
<input type="checkbox"/> New Zoo Revue	33
<input type="checkbox"/> Agriculture Today	34
<input type="checkbox"/> CBS Morning News	35
<input type="checkbox"/> Cartoons	36
<input type="checkbox"/> Captain Kangaroo	37
<input type="checkbox"/> Q-6 Eyewitness News	38
<input type="checkbox"/> Munsters	39
<input type="checkbox"/> Other	40-42
	43-45
	46-48
	49-51

Thursday

___ Q-6 Farm and Home Report	52
___ Idea Thing	53
___ Consultation	54
___ Farm Reports	55
___ Not for Women Only	56
___ Sunrise Semester	57
___ Signs of Life	58
___ Intersect	59
___ Today Show	60
___ Agriculture Today	61
___ CBS Morning News	62
___ Cartoons	63
___ Captain Kangaroo	64
___ Q-6 Eyewitness News	65
___ Munsters	66
___ Other	67-69
_____	70-72
_____	73-75
_____	76-78

Friday

___ Q-6 Farm and Home Report	79
___ Idea Thing	80
___ Consultation	6
___ Farm Reports	7
___ Not for Women Only	8
___ Sunrise Semester	9
___ Agriculture Today	10
___ Today Show	11
___ New Zoo Revue	12
___ Cartoons	13
___ CBS Morning News	14
___ Captain Kangaroo	15
___ Q-6 Eyewitness News	16
___ Munsters	17
___ Other	18-20
_____	21-23
_____	24-26
_____	27-29

10. (a) Do your parents ever keep you from watching something on television that you want to watch?

- \_\_\_ (1) Yes  
 \_\_\_ (2) No [SKIP TO QUESTION 11] 30

(b) How often would you say this happens:

- \_\_\_ (1) often  
 \_\_\_ (2) once in a while, or  
 \_\_\_ (3) hardly ever 31

(c) What are the reasons your parents usually have for not letting you watch?

- \_\_\_ (1) haven't done homework  
 \_\_\_ (2) haven't done chores  
 \_\_\_ (3) parents disapprove of content  
 \_\_\_ (4) parents want to watch something else  
 \_\_\_ (5) other [SPECIFY]

\_\_\_\_\_  
 \_\_\_\_\_ 32-33

(d) Can you think of any times in the past two weeks that your parents wouldn't let you watch a show that you wanted to see?

Name of how		Reason	
1.	34-36	_____	37-38
2.	39-41	_____	42-43
3.	44-46	_____	47-48
4.	49-51	_____	52-53
5.	54-56	_____	57-58

11. Most evenings do you watch T.V. alone or with others?  
 \_\_\_\_\_ (1) alone 59  
 \_\_\_\_\_ (2) with others [SPECIFY] 60-61
- 
12. (a) What channels do you get on your T.V.?  
 \_\_\_\_\_ (1) Channel 2 - ABC (KREM)  
 \_\_\_\_\_ (2) Channel 4 - CBS (KXLY)  
 \_\_\_\_\_ (3) Channel 5 - CBC (CBUT)  
 \_\_\_\_\_ (4) Channel 6 - NBC (KHQ)  
 \_\_\_\_\_ (5) Other [SPECIFY] 62
- 
- (b) How many channels do you get altogether? 63
- 
13. When there are two different shows on at the same time, for example, one on Channel 2 and one on Channel 5, who gets to choose which one to watch?  
 \_\_\_\_\_ (1) parents decide  
 \_\_\_\_\_ (2) subject chooses  
 \_\_\_\_\_ (3) older sibs choose  
 \_\_\_\_\_ (4) parents and children take turns choosing shows  
 \_\_\_\_\_ (5) some of us watch on another T.V. set  
 \_\_\_\_\_ (6) other [SPECIFY] 64-65
- 
14. [FOR THOSE WHO DO NOT HAVE A WORKING T.V. AT HOME; ALL OTHERS SKIP TO QUESTION 15]  
 a) If you haven't got a working television at home, do you watch T.V. elsewhere?  
 \_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 20] 66
- b) How often do you watch T.V.? [PROBE TO ASCERTAIN FREQUENCY, DURATION AND LOCATION, E.G., TWICE A WEEK FOR 2 HOURS AFTER SCHOOL AT MY FRIEND'S HOUSE]  
 Frequency: \_\_\_\_\_ 67-68  
 Duration: \_\_\_\_\_ 69-70  
 Location: \_\_\_\_\_ 71-72
- 
15. a) What is your #1 favorite T.V. show? 73-75  
 \_\_\_\_\_  
 b) When is it on? (day, time) 76-77  
 \_\_\_\_\_  
 \_\_\_\_\_ 78-79  
 c) What are your four next most favorite shows?  
 1. \_\_\_\_\_ 6-8  
 2. \_\_\_\_\_ 9-11  
 3. \_\_\_\_\_ 12-14  
 4. \_\_\_\_\_ 15-17
- 
16. a) Do you usually watch T.V. in the morning before school?  
 \_\_\_\_\_ (1) Yes  
 \_\_\_\_\_ (2) No [SKIP TO QUESTION 17] 18

## b) Which of these shows do you usually watch?

_____ Q-6 Farm and Home Report	19
_____ Idea Thing	20
_____ Consultation	21
_____ Farm Reports	22
_____ Not for Women Only	23
_____ Sunrise Semester	24
_____ Sacred Heart	25
_____ 8 Lively Arts	26
_____ Intersect	27
_____ Today Show	28
_____ New Zoo Review	29
_____ Agriculture Today	30
_____ CBS Morning News	31
_____ Cartoons	32
_____ Captain Kangaroo	33
_____ Munsters	34
_____ Signs of Life	35
_____ Other _____	36-38
_____	39-41
_____	42-44
_____	45-47

## 17. a) Do you usually watch T.V. after school?

_____ (1) Yes	
_____ (2) No [SKIP TO QUESTION 18]	48

## b) Which shows do you usually watch?

_____ Somerset	49
_____ Guiding Light	50
_____ Take 30	51
_____ General Hospital	52
_____ Bewitched	53
_____ Big Money Movie	54
_____ Celebrity Cooks	55
_____ Happy Days	56
_____ Merv Griffin	57
_____ Forest Rangers	58
_____ Family Affair	59
_____ Comin' Up Rosie	60
_____ Electric Company	61
_____ Mickey Mouse	62
_____ Hogans Heroes	63
_____ Hi Diddle Day	64
_____ Just for Fun	65
_____ Superman	66
_____ Q-6 Eyewitness News	67
_____ The Scene Tonight	68
_____ Partridge Family	69
_____ Channel 2 News	70
_____ Nic and Pic	71
_____ Vision On	72
_____ What's New	73
_____ Other _____	74-76

77-79

6-8

9-11

18. a) Do you usually watch T.V. in the evenings after supper?

\_\_\_\_\_ (1) Yes

\_\_\_\_\_ (2) No [SKIP TO QUESTION 19]

12

b) Which of these shows do you usually watch?

_____ NBC News	13	_____ Blue Knight	56
_____ CBS News	14	_____ Upstairs Downstairs	57
_____ ABC News	15	_____ Starsky and Hutch	58
_____ Klahanie	16	_____ The National	59
_____ NFL Football	17	_____ Sportscene	60
_____ To Tell the Truth	18	_____ Matchgame	61
_____ Dinah	19	_____ Hockey	62
_____ Hourglass	20	_____ Sanford and Son	63
_____ Brady Bunch	21	_____ Grady	64
_____ Truth or Consequences	22	_____ Medical Centre	65
_____ Don Adams Screen Test	23	_____ FBI	66
_____ Goodtimes	24	_____ Man Alive	67
_____ Reach for the Top	25	_____ Q-6 Eyewitness News	68
_____ NBC White Paper	26	_____ Newscene	69
_____ Rhoda	27	_____ CBC News	70
_____ Front Page Challenge	28	_____ Channel 2 News	71
_____ Phyllis	29	_____ Tonight Show	72
_____ All in the Family	30	_____ CBS Movie (late)	73
_____ Olympic Games Preview	31	_____ Local Late News	74
_____ Chico and the Man	32	_____ Barney Miller	75
_____ Maude	33	_____ Adam 12	76
_____ Canadian Realists	34	_____ Candid Camera	77
_____ M.A.S.H.	35	_____ Hee Haw	78
_____ Fifth Estate	36	_____ Celebration	79
_____ Rookies	37	_____ Let's Make a Deal	80
_____ One Day at a Time	38	_____ Movin On	6
_____ Family Theatre	39	_____ Happy Days	7
_____ Joe Forrester	40	_____ Joe and Sons	8
_____ Switch	41	_____ This is the Law	9
_____ Wild World of Mystery	42	_____ Welcome Back Kotter	10
_____ Bob Switzer	43	_____ Police Woman	11
_____ Irish Rovers	44	_____ Waltons	12
_____ Bob Newhart	45	_____ The Cop and the Kid	13
_____ Hollywood Squares	46	_____ On the Rocks	14
_____ Little House on the		_____ Medical Story	15
_____ Prairie	47	_____ Hawaii Five-0	16
_____ Tony Orlando and Dawn	48	_____ Streets of San Francisco	17
_____ This Land	49	_____ Watson Report	18
_____ When Things Were Rotten	50	_____ Barnaby Jones	19
_____ Musicamera	51	_____ Harry-0	20
_____ That's My Momma	52	_____ Peep Show	21
_____ Count of Monte Cristo	53	_____ Mannis	22
_____ Cannon	54	_____ Longstreet	23
_____ Baretta	55	_____ Howard Cosell	24

<input type="checkbox"/> S.W.A.T.	25	<input type="checkbox"/> Family Holvak	40
<input type="checkbox"/> Matt Helm	26	<input type="checkbox"/> Columbo	41
<input type="checkbox"/> Jeffersons	27	<input type="checkbox"/> McCloud	42
<input type="checkbox"/> Doc	28	<input type="checkbox"/> McMillan and Wife	43
<input type="checkbox"/> Mary Tyler Moore	29	<input type="checkbox"/> McCoy	44
<input type="checkbox"/> Carol Burnett	30	<input type="checkbox"/> Barbary Coast	45
<input type="checkbox"/> Emergency	31	<input type="checkbox"/> Medical Centre	46
<input type="checkbox"/> NBC Saturday Night Movie	32	<input type="checkbox"/> Kate McShane	47
<input type="checkbox"/> Swiss Family Robinson	33	<input type="checkbox"/> Doctor's Hospital	48
<input type="checkbox"/> Six Million Dollar Man	34	<input type="checkbox"/> Petrocelli	49
<input type="checkbox"/> ABC Sunday Night Movie	35	<input type="checkbox"/> Mobile One	50
<input type="checkbox"/> Three for the Road	36	<input type="checkbox"/> Big Eddie	51
<input type="checkbox"/> Cher	37	<input type="checkbox"/> Other	52-54
<input type="checkbox"/> Kojak	38		55-57
<input type="checkbox"/> Walt Disney	39		58-60
			61-63

19. a) Do you usually watch T.V. on Saturday morning?

- ☐ (1) Yes
- ☐ (2) No [SKIP TO QUESTION 20] 64

b) Which of these shows do you watch?

<input type="checkbox"/> U.S. Farm Report	65	<input type="checkbox"/> Groovie Goolies	7
<input type="checkbox"/> Davey and Goliath	66	<input type="checkbox"/> Peanuts and Popcorn	8
<input type="checkbox"/> Romper Room	67	<input type="checkbox"/> Beyond the Planet of the Apes	9
<input type="checkbox"/> Hong Kong Phooey	68	<input type="checkbox"/> Shazam/Isis Hour	10
<input type="checkbox"/> Josie and the Pussycats	69	<input type="checkbox"/> Speed Buggy	11
<input type="checkbox"/> Sunday School of the Air	70	<input type="checkbox"/> Westwind	12
<input type="checkbox"/> Tom and Jerry/Grape Ape	71	<input type="checkbox"/> Oddball Couple	13
<input type="checkbox"/> The Secret Life of Waldo		<input type="checkbox"/> The Jetsons	14
<input type="checkbox"/> Kitty	72	<input type="checkbox"/> Uncle Croc's	15
<input type="checkbox"/> Pebbles and Bamm-Bamm	73	<input type="checkbox"/> Harvey Cartoons	16
<input type="checkbox"/> Pink Panther	74	<input type="checkbox"/> American Bandstand	17
<input type="checkbox"/> Bugs Bunny Road Runner Hour	75	<input type="checkbox"/> Go U.S.A.	18
<input type="checkbox"/> Lost Saucer	76	<input type="checkbox"/> Ghost Busters	19
<input type="checkbox"/> LE 60	77	<input type="checkbox"/> Other	20-22
<input type="checkbox"/> Land of the Lost	78		23-25
<input type="checkbox"/> Adventures of Gilligan	79		26-28
<input type="checkbox"/> Run Joe Run	80		29-31
<input type="checkbox"/> Scooby Doo	6		

20. a) Do you listen to the radio?

- ☐ (1) often
- ☐ (2) sometimes, or
- ☐ (3) almost never? [SKIP TO QUESTION 21] 32

b) When do you usually listen to the radio?

- ☐ (1) in the morning before school
- ☐ (2) after school
- ☐ (3) in the evenings after supper
- ☐ (4) on Saturday or Sunday
- ☐ (5) other [SPECIFY]

c) What kinds of programs do you listen to on the radio?

- ☐ (1) music  
☐ (2) news  
☐ (3) hockey or football games  
☐ (4) other [SPECIFY]

35-36

21. a) Outside of school, about how many books do you read a month?

37-38

b) Do you ever check books out of your school library or the public library?

- ☐ (1) Yes  
☐ (2) No [SKIP TO QUESTION 22]

39

c) About how often do you check books out of a library?

- ☐ (1) once a week  
☐ (2) 2-3 times a week  
☐ (3) once a month  
☐ (4) a few times a year

40

22. Do you ever read magazines?

- ☐ (1) Yes  
☐ (2) No [SKIP TO QUESTION 23]

41

b) What magazines do you read?

42-44

45-47

48-50

51-53

c) About how often do you read a magazine?

54-56

- ☐ (1) daily  
☐ (2) several times a week  
☐ (3) once a week  
☐ (4) 2-3 times a month  
☐ (5) once a month  
☐ (6) a few times a year

57

23. a) Do you ever read comic books?

- ☐ (1) Yes  
☐ (2) No [SKIP TO QUESTION 24]

58

b) What are your favorite comic books?

1. \_\_\_\_\_  
 2. \_\_\_\_\_  
 3. \_\_\_\_\_

59-61

62-64

65-67



c) About how often do you read a comic book?

- ☐ (1) daily
- ☐ (2) several times a week
- ☐ (3) once a week
- ☐ (4) 2-3 times a month
- ☐ (5) once a month
- ☐ (6) a few times a year

68

24. a) Did you used to read the Salmo & District News?

- ☐ (1) Yes
- ☐ (2) No

69

b) Do you ever read the Trail Times?

- ☐ (1) Yes
- ☐ (2) No

70

c) Do you ever read the Nelson Daily News?

- ☐ (1) Yes
- ☐ (2) No

d) What about other newspapers? Do you ever read a newspaper from Vancouver, Spokane, Calgary, etc?

- ☐ (1) Yes
- ☐ (2) No

72

e) About how often would you say you read a newspaper of any kind?

- ☐ (1) everyday
- ☐ (2) a few times a week
- ☐ (3) once a week
- ☐ (4) 1-3 times a month
- ☐ (5) a few times a year
- ☐ (6) never

73

25. a) How do you usually find out about the news?

- ☐ (1) from the radio
- ☐ (2) from T.V.
- ☐ (3) from a newspaper
- ☐ (4) from a magazine
- ☐ (5) from my parents
- ☐ (6) at school
- ☐ (7) other [SPECIFY2

74-75

b) [IF WATCHES NEWS ON T.V. ASK] What T.V. News Shows do you usually watch?

- ☐ CBS Morning News 76
- ☐ Today Show 77
- ☐ Channel 2- Krem 5:30 News 78
- ☐ The Scene Tonight at 5:30 79
- ☐ Q-6 Eyewitness News - 5:30 80
- ☐ ABC Evening News/Harry Reasoner, Howard K. Smith 6
- ☐ CBS Evening News/Walter Cronkite 7
- ☐ NBC Evening News/John Chancellor 8

_____ Hourglass	9
_____ Channel 2 News at 11:00	10
_____ The Scene Tonight at 11:00	11
_____ Q-6 Eyewitness News at 11:00	12
_____ The National News	13

26. How old were you when your family moved to Salmo?  
\_\_\_\_\_ years

14-15

## APPENDIX E

## Aggression Categories

## I. Physical Aggression

- PA<sub>1</sub> - S hits, slaps, punches, or strikes I with any body part above the waist.
- PA<sub>2</sub> - S hits, slaps, punches, or strikes I with a held object.
- PA<sub>3</sub> - S kicks, steps on, sits on, lies on, or trips I with any body part below the waist.
- PA<sub>4</sub> - S bites or spits I
- PP - S pushes, holds, pulls, grabs, drags, or chokes I
- PS - S snatches the property of I (without damage to that property)
- PD - S damages the property of I
- PI - S tries to create a reaction in I, i.e., teases, annoys, or interferes in the activity of I (except where chasing is involved when PT<sub>3</sub> or PT<sub>4</sub> is scored)
- PT<sub>1</sub> - S threatens I with some part of the body
- PT<sub>2</sub> - S threatens I with a held object
- PT<sub>3</sub> - S chases I
- PT<sub>4</sub> - S chases I with a held object
- PF - S scowls, grimaces, or makes sounds of dislike or anger towards I
- PO - S throws or kicks an object at I, except as it is required for ongoing play activity

## II. Verbal Aggression

- VD - S disparages I, making remarks of dislike for I, finds fault with or censures I, condemns I, humiliates I, laughs at the misfortune of I, mocks, expresses the desire that I be the victim of imperious events, attributes bad qualities to I, curses I.

- VP - S tried to claim a possession of I
- VR - S rejects or denies some activity, privilege, or object to I
- VT - S threatens to hurt I
- VS - S commands or demands I to do something or not to do something in a loud, vigorous, or angry tone of voice.
- VC - S argues with or is at cross-purposes with I, where S makes more than one statement which is separated by a rejoinder.
- VF - S tells an authority figure about I's behaviour which S apparently considers negative
- VB - S shifts the blame for some activity which S apparently considers negative, to I
- VI - S tries to cause injury to I via an agent.

## APPENDIX F

## Coding Sheet Time 1

Name \_\_\_\_\_ Description \_\_\_\_\_ No. \_\_\_\_\_

Aggression Categories	Date Observer Time			Date Observer Time			Date Observer Time			Date Observer Time		
	1	2	3	1	2	3	1	2	3	1	2	3
PA <sub>1</sub>												
PA <sub>2</sub>												
PA <sub>3</sub>												
PA <sub>4</sub>												
PP												
PS												
PD												
PI												
PT <sub>1</sub>												
PT <sub>2</sub>												
PT <sub>3</sub>												
PT <sub>4</sub>												
PF												
VD												
VP												
VR												
VT												
VS												

continued ...

## Appendix F continued

Aggression Categories	Date Observer Time			Date Observer Time			Date Observer Time			Date Observer Time		
	1	2	3	1	2	3	1	2	3	1	2	3
VC												
VF												
VB												
VI												

Comments:

## Appendix F continued

## Coding Sheet Time 2

Name:

Sex:

Description:

Grade:

		Date: / / SF			Date: / / SF			
		Time: LJ			Time: LJ			
PA1	Hit/punch							
PA2	Hit w/obj.							
PA3	Kick/sit on							
PA4	Bite/spit							
PP	Push/hold							
PS	Snatch prop.							
PD	Damage prop.							
PI	Tease/Interfere							
PT1	Threat PA 1							
PT2	Threat/obj.							
PT3	Chase							
PT4	Chase/obj.							
PF	Scowl/sounds							
PO	Throw obj.							
VD	Disparage							
VP	Claim poss.							
VR	Reject/deny							
VT	Threat hurt							
VS	Loud Command							

continued ...

## Appendix F continued

		Date: / / SF			Date: / / SF			
		Time: LJ			Time: LJ			
VC	Argue							
VF	Tattling							
VB	Shift Blame							
VI	Injury/agent							



## APPENDIX G

## Repertoire of Aggressive Behaviour

## Notel

	Time 1			Time 2		
	Male	Female	Sum	Male	Female	Sum
<u>Physical</u>						
PA1	60	26	86	49	23	72
PA2	3	6	9	3	3	6
PA3	14	14	28	54	17	71
PA4	2	5	7	3	2	5
PP	113	31	144	175	136	311
PS	4	1	5	2	0	2
PD	0	0	0	2	0	2
PI	43	7	50	29	10	39
PT1	5	2	7	31	16	47
PT2	0	0	0	9	2	11
PT3	25	3	28	40	38	78
PT4	0	0	0	0	1	1
PF	6	2	8	8	1	9
PO	5	2	7	54	11	65
<u>Verbal</u>						
VD	16	14	30	50	27	77
VP	0	0	0	0	5	5
VR	7	6	13	17	12	29
VT	3	2	5	10	3	13
VS	30	37	67	49	48	97
VC	7	8	15	21	32	53
VF	0	5	5	8	5	13
VB	0	0	0	0	0	0
VI	1	0	1	2	0	2

## Appendix G continued

## Repertoire of Aggressive Behaviour

## Unitel

	Time 1			Time 2		
	Male	Female	Sum	Male	Female	Sum
<u>Physical</u>						
PA1	25	33	58	26	16	42
PA2	2	3	5	2	3	5
PA3	12	4	16	27	6	33
PA4	0	1	1	1	0	1
PP	104	36	140	170	44	214
PS	3	1	4	1	1	2
PD	0	0	0	1	1	2
PI	28	11	39	11	17	28
PT1	0	1	1	8	1	9
PT2	1	0	1	0	1	1
PT3	16	11	27	16	14	30
PT4	0	0	0	1	2	3
PF	7	5	12	6	3	9
PO	20	8	28	87	13	100
<u>Verbal</u>						
VD	19	11	30	23	13	36
VP	0	0	0	1	1	2
VR	0	1	1	2	1	3
VT	0	2	2	6	5	11
VS	17	31	48	17	12	29
VC	8	6	14	21	8	29
VF	1	0	1	9	6	15
VB	0	0	0	0	0	0
VI	0	1	1	0	1	1

## Appendix G continued

## Repertoire of Aggressive Behaviour

## Multitel

	Time 1			Time 2		
	Male	Female	Sum	Male	Female	Sum
<u>Physical</u>						
PA1	32	16	48	36	9	45
PA2	4	10	14	5	2	7
PA3	9	4	13	30	17	47
PA4	0	1	1	1	0	1
PP	101	85	186	273	132	405
PS	13	3	16	4	1	5
PD	1	0	1	0	0	0
PI	35	16	51	15	5	20
PT1	13	2	15	16	2	18
PT2	6	1	7	4	2	6
PT3	25	8	33	16	18	34
PT4	0	0	0	3	0	3
PF	2	7	9	3	1	4
PO	32	1	33	5	2	7
<u>Verbal</u>						
VD	35	39	74	21	8	29
VP	0	0	0	1	0	1
VR	7	7	14	8	4	12
VT	9	9	18	7	5	12
VS	29	19	48	50	19	69
VC	22	16	38	21	8	29
VF	0	1	1	5	0	5
VB	0	0	0	0	0	0
VI	5	5	10	5	1	6

## APPENDIX H

Key: Abbreviations Employed in the Correlation Tables

- SS1 : Sum of teacher rating measures Aggressive; Argumentative;  
Bossy; Hostile
- SS2 : Sum of teacher rating measures Active; Loud
- SS3 : Sum of teacher rating measures Competitive; Dominant
- SS4 : Sum of teacher rating measures Friendly; Honest
- PR1 : Peer rating for Bossy
- PR2 : Peer rating for Fights
- PR3 : Peer rating for Talks back
- PR4 : Peer rating for Argues; Disagrees
- PR5 : Peer rating for Push; Shove; Poke
- AVSS6 : Observational measure for Physical Aggression
- AVSS7 : Observational measure for Verbal Aggression

# APPENDIX I

## Time 1 Correlations among Teacher Ratings, Peer Ratings, and Observational Measures of Aggression, Collapsed across Towns

	SS1	SS2	SS3	SS4	PR1	PR2	PR3	PR4	PR5	AVSS6	AVSS7
SS1	1.00										
SS2	.78	1.00									
SS3	.59	.65	1.00								
SS4	-.27	-.16	.27	1.00							
PR1	.41	.47	.28		1.00						
PR2	.26	.36		(-.14)	.59	1.00					
PR3	.43	.46	.19		.74	.60	1.00				
PR4	.38	.47	.24		.85	.69	.74	1.00			
PR5	.39	.46	.18	-.23	.66	.63	.61	.63	1.00		
AVSS6	.37	.36	.27		.28	.49	.36	.41	.38	1.00	
AVSS7	.22	.31	.28		.17			.17		.19	1.00

---

Correlation coefficients significant at .05 level

Correlation coefficients in parentheses significant at .10 level

Appendix I continued

Time 1 Notel: Correlations among Teacher Ratings, Peer Ratings, and  
Observational Measures of Aggression

	SS1	SS2	SS3	SS4	PR1	PR2	PR3	PR4	PR5	AVSS6	AVSS7
SS1	1.00										
SS2	.78	1.00									
SS3	.58	.78	1.00								
SS4	-.31			1.00							
PR1	.62	.63	.53		1.00						
PR2	.39	.47	(.22)		.55	1.00					
PR3	.60	.55	.36		.76	.63	1.00				
PR4	.57	.61	.46		.91	.73	.80	1.00			
PR5	.68	.62	.55	(-.25)	.73	.61	.70	.71	1.00		
AVSS6	.39	.37	.16	-.35	.36	.75	.41	.54	.50	1.00	
AVSS7	(.26)	.46	.50		.27						1.00

---

Correlation coefficients significant at .05 level

Correlation coefficients in parentheses significant at .10 level

Appendix I continued

Time 1 Unitel: Correlations Among Teacher Ratings, Peer Ratings, and  
Observational Measures of Aggression

	SS1	SS2	SS3	SS4	PR1	PR2	PR3	PR4	PR5	AVSS6	AVSS7
SS1	1.00										
SS2	.75	1.00									
SS3	.68	.72	1.00								
SS4			.49	1.00							
PR1		(.24)			1.00						
PR2					.71	1.00					
PR3		(.25)			.49	.44	1.00				
PR4					.59	.66	.47	1.00			
PR5					.42	.64	.46	.51	1.00		
AVSS6		.40	.40				.42	.33	(.27)	1.00	
AVSS7			.26				.35	(.22)			1.00

---

Correlation coefficients significant at .05 level

Correlation coefficients in parentheses significant at .10 level

Appendix I continued

Time 1 Multitel: Correlations among Teacher Ratings, Peer Ratings, and  
Observational Measures of Aggression

	SS1	SS2	SS3	SS4	PR1	PR2	PR3	PR4	PR5	AVSS6	AVSS7
SS1	1.00										
SS2	.82	1.00									
SS3	.55	.54	1.00								
SS4	-.45	-.41		1.00							
PR1	.33	.28	(.24)		1.00						
PR2	.31	.46	(.25)	-.31	.53	1.00					
PR3	.54	.52		-.32	.53	.46	1.00				
PR4	.40	.41	(.24)		.60	.34	.42	1.00			
PR5	(.21)	.39		-.43	.64	.74	.42	.36	1.00		
AVSS6	.32	.35	(.24)		.38	.42	.52	(.26)	.36	1.00	
AVSS7	.42	.36					.33				1.00

---

Correlation coefficients significant at .05 level

Correlation coefficients in parentheses significant at .10 level



Appendix I continued

Time 2: Correlations among Teacher Ratings, Peer Ratings, And Observational  
Measures of Aggression, Collapsed Across Towns

	SS1	SS2	SS3	SS4	PR1	PR2	PR3	PR4	PR5	AVSS6	AVSS7
SS1	1.00										
SS2	.62	1.00									
SS3	.49	.22	1.00								
SS4	-.66	-.41	(-.14)	1.00							
PR1	.27	.31			1.00						
PR2	.25	.35			.74	1.00					
PR3	.38	.40	(.15)	-.20	.72	.62	1.00				
PR4	.32	.27	(.13)		.71	.63	.65	1.00			
PR5	.28	.43		-.17	.74	.78	.72	.65	1.00		
AVSS6		.21			.32	.39	.32	.37	.41	1.00	
AVSS7		-.23			.21		.21		.20	.38	1.00

---

Correlation coefficients significant at .05 level

Correlation coefficients in parentheses significant at .10 level

Appendix I continued

Time 2 Notel: Correlations Among Teacher Ratings, Peer Ratings, and  
Observational Measures of Aggression

	SS1	SS2	SS3	SS4	PR1	PR2	PR3	PR4	PR5	AVSS6	AVSS7
SS1	1.00										
SS2	.70	1.00									
SS3	.46	(.24)	1.00								
SS4	-.45	-.45		1.00							
PR1	.40	.34			1.00						
PR2		.44			.58	1.00					
PR3	.68	.46	.23	-.38	.63	.29	1.00				
PR4	.51	.41		-.36	.80	.56	.75	1.00			
PR5	(.26)	.42		(-.24)	.72	.72	.66	.75	1.00		
AVSS6									(.25)	1.00	
AVSS7							(.23)			.28	1.00

---

Correlation coefficients significant at .05 level

Correlation coefficients in parentheses significant at .10 level

Appendix I continued

Time 2 Unitel: Correlations among the Teacher Ratings, Peer Ratings, and  
Observational Measures of Aggression

	SS1	SS2	SS3	SS4	PR1	PR2	PR3	PR4	PR5	AVSS6	AVSS7
SS1	1.00										
SS2	.48	1.00									
SS3			1.00								
SS4	-.45		.36	1.00							
PR1	.39	(.27)		-.41	1.00						
PR2	(.25)			(-.28)	.98	1.00					
PR3	.44	.47		-.35	.89	.86	1.00				
PR4					.65	.63	.53	1.00			
PR5	.51	.43		-.39	.84	.85	.85	.64	1.00		
AVSS6		(.26)			.49	.53	.45	.49	.49	1.00	
AVSS7	.36									.38	1.00

---

Correlation coefficients significant at .05 level

Correlation coefficients in parentheses significant at .10 level

Appendix I continued

Time 2 Multitel: Correlations among Teacher Ratings, Peer Ratings, and  
Observational Measures of Aggression

	SS1	SS2	SS3	SS4	PR1	PR2	PR3	PR4	PR5	AVSS6	AVSS7
SS1	1.00										
SS2	.77	1.00									
SS3	.47	.39	1.00								
SS4	-.70	-.61		1.00							
PR1	.34	.32	.34		1.00						
PR2	.37	.38	.44		.76	1.00					
PR3	.28	.29	.33		.66	.79	1.00				
PR4	.39	(.26)	.33		.66	.74	.61	1.00			
PR5	.36	.43			.64	.80	.64	.55	1.00		
AVSS6	(.24)		(.22)		.49	.55	.45	.56	.56	1.00	
AVSS7		.39			.31		(.26)		.27	.39	1.00

---

Correlational coefficients significant at .05 level

Correlational coefficients in parentheses significant at .10 level

## APPENDIX J

## Viewing Hours Per Week Time 1

Hours/Week	Notel (N=30)		Unitel (N=34)		Multitel (N=39)	
	No. of Subjects	%	No. of Subjects	%	No. of Subjects	%
0	21	70	4	11.8		
1-5	1	3.3			1	2.6
6-10	2	6.7	3	8.8	1	2.6
11-15	1	3.3	3	8.8		
16-20	1	3.3	4	11.8		
21-25			4	11.8	5	12.8
26-30	1	3.3	2	5.9	5	12.8
31-35	1	3.3	4	11.8	7	17.9
36-40					3	7.7
41-45					4	10.3
46-50			1	2.9	3	7.7
51-55			1	2.9	2	5.1
56-60					1	2.6
Little <sup>*</sup>			4	11.8		
Sometimes	1	3.3	1	2.9	4	10.3
Lots	1	3.3	3	8.8	3	7.7

\*These children did not know how many hours they watched of TV per week, so they were asked whether it was: "a little; lots; or just sometimes".

## Appendix J continued

## Viewing Hours Per Week Time 2

Hours/Week	Notel (N=38)		Unitel (N=39)		Multitel (N=37)	
	No. of Subjects	%	No. of Subjects	%	No. of Subjects	%
0	5	13.16	2	5.13	4	10.81
1-5	1	2.63	-	-	1	2.70
6-10	1	2.63	-	-	-	-
11-15	4	10.53	-	-	-	-
16-20	4	10.53	2	5.13	4	10.81
21-25	5	13.16	9	23.08	8	21.62
26-30	10	26.32	9	23.08	6	16.22
31-35	4	10.53	9	23.08	3	8.11
36-40	3	7.89	6	15.38	1	2.70
41-45	-	-	2	5.13	5	13.52
46-50	1	2.63	-	-	1	2.70
51-55	-	-	-	-	2	5.40
56-60	-	-	-	-	1	2.70
60+	-	-	-	-	1	2.70
Mean no. hours/week	21.72		28.21		28.71	
Median no. hours/week	25		27.5		25.5	