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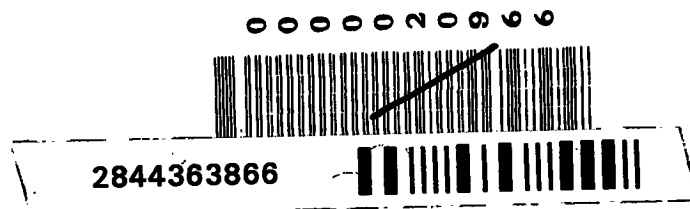
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The effect of different kinds of television programming on the youth

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PREFACE

In the field of television research a major concern of researchers throughout the years has been the impact of television on the youth. Consequently, a large number of investigations have been carried out on this topic. In line with this tradition, this study is aimed at assessing the relative influences of pro-social, aggressive and neutral television content on the behaviour of young children. By making use of a field-experimental type of setting, an attempt was made to avoid the limitations of both laboratory experiments and field-correlational studies. A significant advantage was gained by using television naïve children as subjects in the investigation.

From start to finish, this study was characterised by international co-operation and consultation between the authors of this report and a number of eminent social scientists from overseas. The contribution of these overseas colleagues, especially the pre-coded television programmes, proved to be indispensable to the successful completion of the research. Hopefully this investigation will be the forerunner of more such co-operative ventures.

J.G. Garbers

PRESIDENT

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The Committee of Heads of Education who initially granted permission for launching the project; the representatives of the education departments who helped in the screening and selection of the television programmes; the principals of schools and their staff members who acted as testers and who exhibited the programmes; and the pupils who acted as subjects in the field experiment.

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OPSOMMING

Hierdie ondersoek kan beskryf word as 'n langtermynveldeksperiment wat daarop gemik is om die invloed van verskillende soorte televisieprogramme op die prososiale en aggressiewe gedrag en houdings van skoolgaande en voorskoolse kinders na te gaan. Groepe televisie-naïewe proefpersone wat op ewekansige wyse saamgestel is, is blootgestel aan 'n reeks televisieprogramme waarvan die inhoud òf aggressief, òf prososiaal, òf neutraal was, terwyl een groep geen televisieprogramme gesien het nie. Deur van 'n toets-hertoetstipe van ontwerp gebruik te maak, is inligting deur middel van 'n verskeidenheid van meetinstrumente voor sowel as na die blootstelling aan die programme ingewin. Aanduidings is gevind dat die besigtiging van sekere soorte televisie-inhoud soos humor 'n verlaging kan meebring van wat in die terminologie van Berkowitz se opwekkingsteorie die aktiveringspotensiaal genoem kan word, en dat dit tot 'n vermindering van aggressiewe gedrag kan lei. In die geheel is egter bevind dat 'n aantal veranderlikes soos die proefpersone se ouderdom, geslag, huistaal en belangstelling in die programme 'n rol by die invloed van die programme kan speel, en gevolglik beklemtoon die resultate dat een enkele en eenvoudige verduideliking of teorie onvoldoende mag wees om die relatiewe invloede van die verskillende soorte televisie-inhoud te verklaar.

SUMMARY

This study can be described as a long-term field experiment aimed at investigating the relative effect of different kinds of television programmes on certain aggressive and pro-social behaviour and attitudes of schoolgoing and pre-school children. Groups of randomly selected television-naïve subjects were shown a series of either aggressive, pro-social or neutral television programmes, while one group saw no programmes at all. By employing a test-retest type of design, both pre- and post-exposure data were obtained by means of a variety of measuring instruments. Some evidence was found to indicate that, in terms of the Berkowitz Arousal theory, watching certain television content such as humour may lower the excitatory potential, and in so doing lead to a reduction of aggressive behaviour. On the whole, however, a number of variables such as the subjects age, sex, home language and interest aroused by the programmes modify the effect of the programmes, and consequently the results emphasise that a single simple explanation or theory may be inadequate to explain the relative effects of the different kinds of television content.

CHAPTER 1

INTRODUCTION

1.1 TELEVISION AS SOCIALIZATION FORCE

Each communication medium, usually at the peak of its adoption, has been subjected to careful scrutiny of its detrimental effects on the youth.

Although television programming is not necessarily more aggressive than film or comic books, one can safely say that the ill-effects of television, more than any other medium, have consistently been the subject of debate and research.

If television content does not differ markedly from that found in other forms of mass media, the widespread and consistent concern over television's possible social influence must be sought in the nature of the medium. Indeed, as socialization force, television is the most powerful medium which delivers its message in the home for more hours a day than any medium has ever done before.

Apart from being accessible to the illiterate, it also requires less effort to watch television than to read a book or to go out to the movies. The greater effort related to accessibility also makes for greater selectivity. The television set is always there and is usually on. Some countries have more than one channel but selectivity is limited to what is available. People switch to another channel rather than switch the set off. A greater amount of decision-making and hence greater parental control is involved in going out to see a movie. The uniqueness of television consists of three elements related to its nature as communication medium which in combination affects the individual, and particularly the very young, in a completely unprecedented way. These elements are:

- a. The sheer volume of television intake;
- b. its moving visual content;
- c. the familiar environment of the home.

The above characteristics of the medium reflect television as a major socialization force. Approaching television as a major socialization force requires a much broader framework and conceptualization than has been the case with the bulk of television research of the past which has been directed to the issue of the relationship between the portrayal of violence and children's aggressiveness. Indeed, the standard response of overseas television industry spokesmen when challenged with the ill-effects also no longer suffices. Perceiving television as a major socialization force demands more responsibility than variants of the following responses to the accusation of the ill-effects of television:

- a. We just give people what they want.
- b. Television programming is entertainment and entertainment programming does not have any impact upon people.
- c. We report news. We can't be held responsible if someone sees something on television and goes and does the same thing.
- d. We do not create reality. Television simply depicts reality, or television simply reflects culture.

On the other hand, approaching television as a major socialization force raises some important questions when reviewing the vast amount of literature on the ill effects of television.

- a. As socialization force television is but one of a number of socialization forces affecting the child. Individual examples in which television programming had negative behaviour as a result may point to the effect of television, but may also indicate a lack of socialization rather than the strong effects of television.

It cannot be denied that television does provide its audience with information and examples. Any medium by which information about the world is communicated has this function. If, however, television can influence antisocial behaviour, it can also affect pro-social behaviour.

- b. Leifer, Gordon and Graves (1973) suggested that the effects of television on children is to be understood in terms of multiple interactions among the child, television and other socialization agents. A logical conclusion to such a statement will be that the effects of television will depend upon the socialization practices within a particular society i.e. the relative impact of the other socialization agents such as parents, school, church, etc.
- c. The effects of the various sources of influence will vary according to developmental changes and exposure of different age levels. Roberts (1973) suggested age-located differences in the uses of and responses to television in at least the following areas:
 - 1. Increasing experience against which to judge new information;
 - 2. qualitatively and quantitatively different cognitive capabilities with which to judge new information, and
 - 3. differential motoric capabilities with which to perform observed behaviours.
- d. Approaching television as a major socialization force poses some questions concerning the learning of social behaviour. Socialization refers to the degree to which the values and norms of a society have been internalized.

This means that the child not only learns the appropriate behaviours and expectations within different situations but also the role definitions and underlying values as reasons for these behaviours.

Bandura (1971) indicated that man can learn by observation of others being rewarded or punished for their actions. However, such vicarious learning is dependent upon cognitive control. The cognitive capacity of man enables him to control his own behaviour through cognitive representation of consequences and the thought process of problem solving. Such cognitive control is always exercised within situational factors and the roles that other people occupy.

1.2 POINTS OF VIEW ON THE EFFECTS OF TELEVISION

Suggestions on how television may effect violence and aggression in the viewer presupposes a socialization approach. The research conducted on the effects of television, however, has not always kept in mind that television is but one of the possible sources of influence. Problems inherent in measuring the effects of television and difficulties in establishing generalizable causal relationships between viewing aggressive television programmes and aggressiveness are the main reasons why no firm conclusions could be drawn for the hundreds of studies conducted on this issue.

1.2.1 Television viewing increases aggressiveness

The sheer volume and repetition of aggression in overseas television broadcasts intensified concern about their possible detrimental effects. The National Association for Better Radio and Television estimated that the average American child between 5 and 15 views the violent destruction of more than 13 400 persons on television (Liebert, Neale and Davidson, 1973). Generalizations about the likely effects of television violence were summarized by Baker and Ball (1969). Unfortunately, not much empirical evidence in support of their generalizations is provided and the evidence they do provide is mostly of the correlational kind which is not without its critics. Generalizations about the effects of violence on television can be summarized into the following broad categories.

- a. Watching a television programme containing violence may cause a child to perform violent or aggressive actions. Such modelling behaviour (see Liebert, Neale and Davidson, 1973) may lead to acquiring behaviours or accepting the behaviour to be performed later in a different situation. Furthermore, the child can also directly imitate the model's behaviour or imitate the same kind of behaviour although different in particulars. Facilitation of the same type of behaviour is called disinhibition. Seeing aggressive responses, for example using weapons which are unavailable to children, may lead to other

types of aggressive behaviour. As indicated previously cognitive factors also come into play. Especially older children also learn the appropriateness of certain actions in various situations. Two factors, vicarious consequences and the status of the model are considered especially important in observational learning. It is granted that vicarious punishment may inhibit aggressive behaviour but the claim that it is always the bad guy who gets punished is nullified by the counter argument that the child may later display the behaviour he has learnt from the punished model if the incentives become adequate.

- b. Seeing violent acts on television may make people less sensitive to violence in real life. The suggestion is that one's perception of violence may be blunted by prolonged exposure of violence on television and that one may thus be less likely to notice or be aware of violent acts. Desensitization had been cited as a serious example of the possible effects of television (Wertham, 1966; Liebert, Neale and Davidson, 1973; Kline, Croft and Courrier, 1974). The one study by Rabinovitch et al. (1972) cited by Liebert, Neale and Davidson (1973) could be interpreted as a confirmation of desensitization, but also as an indirect confirmation of the catharsis hypothesis (see Atkinson and McLelland, 1958) in that seeing aggressiveness can lead to a lowering of arousal level and thus to less perception of violence.
- c. Watching violence on television may increase the tolerance towards acts of violence by others. The individual who has regularly seen violent content over a long period of time would probably passively observe violence between others and will be less inclined to attempt to prevent other individuals behaving in an aggressive manner. Such passivity is seen as a kind of self-protection. To avoid being upset by the aggressiveness seen on television, viewers develop thick skins, and in so doing, avoid becoming emotionally involved.
- d. Television may be presenting an antisocial system of values. Violent methods are the ones most frequently used in achieving goals. If a child comes to believe that acting violently is the normal way of dealing with problems and at the same time learns how to act violently from watching violent situations on television, it is conceivable that he will acquire violent habits. There is, however, more to the learning of values on television than simply learning aggressive habits. There is also a whole range of values concerned with work, education, family and manners which are seldom portrayed on television. Viewers who are most exposed to the attitudes and values of violence would probably -
 1. resolve conflict by means of violence rather than by other non-violent

means;

2. would use violence as a means to obtain desired goals;
3. value self-confidence and toughness as necessary to achieve ends.

Such an attitude is an extension of the attitude that young men can enhance their masculinity by displaying proficiency in violence.

1.2.2 The Catharsis Hypothesis

Whereas modelling behaviour leads to an increase of aggressive behaviour owing to the viewing of aggressiveness on television, the catharsis hypothesis predicts that viewing violence will reduce aggression in the observer. The chief proponents of the catharsis hypothesis, Feshbach and Singer (1971), suggest that the mass media serve to stimulate fantasy and that fantasies are: "... substitutes for overt behaviour which are partly rewarding in themselves and which may reduce arousal, as coping or adaptive mechanisms useful when delays in gratification occur, and as aids to arousal culminating in overt behaviour" (p. 11).

Feshbach and Singer's hypothesis certainly is not so far removed from certain accepted principles in clinical psychology (catharsis of patient through the therapist) and motivation theory (Atkinson and McClelland, 1958), and the reasons why females listen to day-time serials. Atkinson and McClelland refer to motive as a disposition within a person for certain actions either to reach certain goals or to avoid negative outcomes. Such action tendencies are influenced by cues of the situation which indicate if performance of an act will lead to an incentive for which the person has a motive. Whether or not an individual will perform an act depends therefore on his disposition as well as the incentive value and the probability that a given behaviour will lead to desired outcomes. Engaging in the activity is seen as a consummatory force which reduces the action tendency.

As far as aggression is concerned, seeing an aggressive programme may present cues which instigate aggressiveness, but generalization of response tendencies, if actual aggressive behaviour is thwarted, may take place (that is fantasy aggression).

Another way in which televised violence might reduce aggression, as suggested by Feshbach and Singer is equally plausible. According to the above motivation theory fear of negative consequences may inhibit a certain action.

"It may frighten the viewer of violence and its possible consequences: The viewer consequently avoids aggressive behaviour in order to reduce his fear of what he may do or what may be done to him" (Feshbach and Singer, 1971, p. 15). Such a point of view suggests that a simplistic view of aggression is not enough. Fac-

tors such as motivation for aggression, that is whether aggression is justified and whether it occurs within the framework of the norms of society, and the consequences of aggressive behaviour all come into play. Closely linked with the above factors which point to an interpretation of the situation is the cognitive and moral development of the child. Theories which apply to adults may not necessarily apply to young children. One cannot deny that television does provide children and adults with information and ideas about illegal and aggressive behaviour. Some such information may be put to illegal or aggressive uses.. However, as Bandura puts it: "People are not simply reactors to external influences; through self-generated inducements and self-produced consequences they exercise influence over their own behaviour" (Bandura, 1978, p. 23).

Feshbach and Singer found support for their catharsis hypothesis in a field experiment conducted with approximately 400 adolescent and pre-adolescent boys from three private schools (upper middle-class) and four boys' homes (lower class of which 55% were Whites). The television viewing of these subjects were controlled for a period of six weeks. Half of the boys were required to view at least six hours of aggressive content per week and half of the subjects to view six hours per week of non-aggressive content. A number of measures of aggression were employed which included projective tests, attitudinal questionnaires and a behaviour rating scale. Behaviour was rated throughout the viewing period as well as for a week prior to and a week following viewing.

Feshbach and Singer found that on the behaviour rating scale, boys in the non-aggressive television group were more aggressive than boys in the aggressive content group. This difference was solely due to the effect of three boys' homes. In the private schools the reversed pattern appeared. Although the difference was not significant, boys in the non-aggressive television content groups declined in overt aggression and boys in the aggressive television group tended to increase. The findings that for one identifiable group viewing television violence reduced subsequent aggressive behaviour provide support for the catharsis hypothesis.

However, several criticisms have been raised against the Feshbach and Singer experiment. Alternative explanations for the findings were offered by Chaffee and McLeod (1971) who suggested that the reason that some control subjects were more aggressive is that they resented being restricted to non-aggressive programmes and that this found expression in increased aggression. Liebert, Neale and Davidson (1973) pointed out that boys in the non-aggressive television group in those institutions where the catharsis effect appeared, had objected successfully against not being permitted to watch Batman. Such yielding on the part of the experimenters might have reinforced aggressive behaviour. This constitutes a serious treatment difference that could account for the increase.

The above criticisms certainly are valid. However, reaction against the Feshbach and Singer experiment is too often directed against the superficial implication that "watching violent programmes may reduce aggression". An attitude to disprove the Feshbach and Singer experiment neglects the obvious limitations of experimental and correlational studies. Rather, the Feshbach and Singer study compels social scientists to be more analytic in approach, to ask questions which are more precise in order to determine the real effects of television. For one thing, the process of socialization is more complicated and motivation more complex than simple imitation.

Liebert, Neale and Davidson report a replication study of the Feshbach and Singer experiment done by Wells as an example of a direct reversal of the results obtained by them. Wells found that boys who watched only programmes from which all "action and adventure had been expunged" were somewhat more aggressive verbally than those who watched a heavy diet of aggression. The boys who viewed the more violent television programmes displayed greater physical aggressiveness but the differences were limited to boys who were above average in aggression before the study began.

Stein and Friedrich (1972) exposed 97 pre-schoolers attending a summer nursery school programme to violent, neutral or pro-social television programmes for ten to fifteen minutes a day over a period of four weeks. Baseline scores were established for each child's habitual behaviour. Free play behaviour was also coded during the exposure period and for two weeks following exposure. The results of this study showed that children who viewed aggressive programming were more likely to be aggressive in interpersonal situations than children who viewed neutral or pro-social programmes. These results held only for those children who were above the median in initial aggression. Children low in initial aggressiveness did not differ as a function of the programmes.

Rather than reversing the results of the Feshbach and Singer experiment, the above studies could point to the effects of socialization and sensitivity to sanctions against aggression.

- a. Both the Wells (Liebert, Neale and Davidson, 1973) and Stein and Friedrich (1972) studies (as well as those done by a great many other researchers) found that increased aggressiveness was limited to boys who were above average in aggressiveness (less completely socialized against performing aggressive behaviour).
- b. Measuring the effects of viewing violent content cannot be done within a social vacuum. Sanctions against aggressiveness within one environment may be stricter than in others. When aggressive behaviour is thwarted responses may

be generalized to fantasy behaviour.

- c. Evidence from earlier studies indicate cultural factors such as programme differences as playing a role in the effects of aggressiveness. Schramm, Lyle and Parker (1961) found that among children in the United States the heavy viewers expressed favourable attitudes towards anti-social aggression. In Canada however, it was found that twelve-year-olds who watched television were actually less aggressive than those who did not. The results of Himmelweit, Oppenheim and Vince (1958) in Britain, with regard to aggression, were inconclusive, when teachers rated the aggressiveness of their pupils, no difference between the viewers and non-viewers emerged. More recently Dennis Howitt (1971) and Howitt and Cumberbatch (1972) found over several studies that identification with a character did not bring about changes in evaluation of an anti-social act performed by that character. In a survey involving 206 school children aged 11 to 15 years in Leicestershire, England, Howitt (1972) attempted to test the generalizations about the likely effects of television violence put forward by Baker and Ball (1969). In summary, the results of Howitt's study indicate that television has no influence on established attitudes portrayed in circumstances which are familiar to children. Only some attitudes pertaining to certain situations could be influenced by television exposure. According to Howitt, where the pressures and constraints of everyday life are relevant to the media message, then the child is unlikely to adopt the media message as part of his value system since he has much more relevant experiences on which to base his value system.

Dissimilar results were obtained by Greenberg (1974) for British children. Positive relationships between aggressive attitudes and television exposure were found among children of all ages. However the authors point out that these relationships are moderate and children's aggression can definitely not be attributed solely to the watching of television violence. One interesting finding was that watching Westerns was not related to aggressive attitudes since children are able to discount the violence as historical fantasy, whereas violent content in contemporary programmes is more likely to influence the child.

- d. The above studies, apart from the question of norms and cultural factors, raise questions about the context and classification of violent and aggressive content. The Wells study, for example, excluded all "action and adventure". Typically all intentions to harm somebody, whether verbal or physical, are regarded as violence. Research on the effect of aggressive content variations on children's behaviour is scant. A few studies do exist which investigate the relationship between various stimulus dimensions and reality perceptions. Consistent with Greenberg's results, Gordon (1973) found that fifth and sixth

grade boys perceive violence portrayed in a present day context to be more real than violence in historical settings. Bandura, Ross and Ross (1963) have indicated that pre-school children were affected significantly in their modelling of the aggression of a cartoon model as well as of a human model, but more so in the case of a human model. It stands to reason that learning from television will also depend upon stimulus inputs such as rate, complexity, repetition and discriminability of behaviours as well as cognitive factors such as comprehension of the child. More recently Salomon (1975) indicated that television techniques such as fade, pan and zoom influence the perception of television information. Since perception and comprehension are age-related factors, programme characteristics could influence the ability of young children to comprehend cause and effect relationships and the degree to which television violence is perceived as true to life. Furthermore, a number of situational and personal factors (including the attitudes towards violence, initial aggression level and habits, as well as opportunity and sanctions to act aggressively within the situation) could influence the relationship between viewing aggressive content and actual aggressive behaviour. In the true sense of the word, the Wells study cannot be regarded as a replication of the Feshbach and Singer experiment.

- e. The strongest evidence supporting the view that one should not discard the Feshbach and Singer (1971) results too hastily, comes from David Armor (1975) who re-analyzed the data presented by Feshbach and Singer (1971), Stein and Friedrich (1972) and Wells (Liebert, Neale and Davidson, 1973). Armor argues that because of problems of randomization that occur in field experiments it is not sufficient to take into account only the critical levels of aggressiveness but one should also consider the possibility that differences in initial levels may imply differences in rates of change. After a change model had been applied to the above studies, the data of Feshbach and Singer, indicated that aggressiveness was reduced among boys who watched violent television content while the Stein and Friedrich and the Wells data revealed no effect of viewing television violence.

The fact that there is a great deal about the relationship between television violence and children's aggressive behaviour that is not yet understood, should caution against blanket conclusions. Such blanket conclusions include statements such as "viewing violent television content reduces aggression" as well as the unqualified statement that "viewing aggressive television programmes increases aggressiveness".

1.2.3 Sub-cultural account of media effects

Dennis Howitt and Richard Dembo (1974) have argued that "street culture" outweighs

any contribution the media make to influence violent behaviour. The behaviour patterns of so-called delinquent sub-cultures can serve to explain many of the available research findings on violence. They argue that the bioscope, comic books and pop music, which are associated with aggression and delinquency, all represent valued activities among members of the street culture. Beliefs and activities of these adolescents, whose life chances force them to live in circumstances which allow for little upward mobility, contrast with the achievement orientation of other young people striving for upward mobility. These socially static youngsters therefore develop alternative means of achieving self-esteem which are based upon the norms and values of the street culture, for example success at roles demanding physical and sexual powers and success at contact sports such as boxing and football.

The majority of American studies which examined the effects of watching violent television content as a function of prior aggressiveness, concur that the effect appears to be limited to more aggressive children. Howitt and Dembo cite the results of a study in which peer-ratings of aggressive behaviour did not differentiate between the subjects in terms of mass media usage. On the other hand a measure of street culture correlated significantly with pop music and attendance of bioscopes.

It may well be that differences in initial aggressiveness may be related to street culture variables. However, it is unlikely that street culture is the only determinant of aggressiveness. McLeod, Atkin and Chaffee (1972a) used partial correlation techniques to remove the possible contributions of factors such as family socio-economic status, and found that correlations between violence viewing and various measures of aggressiveness hold for both sexes and for children of different ages and from different communities.

The viewpoint advanced by Howitt and Dembo (1974) could serve as a reminder that aggression could be ascribed to one or more of a multitude of factors. The vast majority of research on television violence has been undertaken in the United States. Extrapolating these findings to South Africa may disregard cultural differences (which may be substantial) such as socialization, parental control, and attitudes towards violence.

1.2.4 Psychological arousal theory

The explanation of the effects of violent programmes on subsequent aggressiveness advanced by Berkowitz, Corwin and Heironimus (1963) and Tannenbaum (1972) is consistent with the social psychological research conducted on physiological arousal and emotion. Schachter and Singer (1962) found that internal arousal is labelled as euphoria or anger according to the cognitions derived from social conditions

surrounding the participant. This initial finding led to the idea that violent content evokes in the observer a generalized emotional arousal. The social situation is determined by the content itself so that the observer labels his arousal as aggression. The need for cognitive consistency may lead the subject to behave in an aggressive manner consistent with the internally aroused state labelled as aggression.

Berkowitz, Corwin and Heironimus (1963) suggested that prior arousal may cause a person to be more receptive to aggressive cues contained in the communication material. The arousal state facilitates the process of linking violent material to aggressive action rather than directly leading to aggressiveness. Tannenbaum (1972) fundamentally agrees with the concept of emotional arousal but emphasises that the arousal level per se is of more importance than the mere presence of the aggressive cues. Any communication message, not only violence, can evoke emotional arousal which will facilitate aggressive behaviour. Zillman (1972) found with adults that erotic communications tended to increase post-exposure aggressiveness. He suggested that aggressiveness following aggressive communications is not so much the effect of being exposed to aggressive stimuli as such, but rather the result of the excitatory potential of the communications.

The above research suggests that any television content, not only violence, which evokes emotional arousal can facilitate subsequent aggressive behaviour. Such a point of view raises serious questions about the classification of aggressive and non-violent content of previous experiments. The question also arises whether emotional arousal will decrease with prolonged exposure to dramatic stimuli. The experiments conducted by Berger (1962) as well as by Lazarus (1966) indicate that viewers become emotionally less responsive with repeated observations of violence. This suggests that viewers who initially experience anxiety when viewing aggressive content may learn to tolerate aggressiveness on and off the screen.

The arousal theory may account for initial emotional reactions to aggression, but in the long run repeated observation of violence may result in a decrease of emotional arousal and thus in a decrease of subsequent aggressive behaviour.

1.2.5 Pro-social effects of television

It seems reasonable to assume that if violent content affects the aggressive behaviour of children, programmes portraying pro-social behaviour will have desirable effects on the subsequent behaviour. In fact, due to societal sanctions against aggressiveness we can expect the effects of pro-social programmes to be more pronounced.

Early studies demonstrated the therapeutic value of television to overcome fears.

Bandura and Menlove (1968) as well as Hill, Liebert and Mott (1968) found that exposing pre-school children who were initially fearful of dogs, to films showing other youngsters playing with a dog, reduced their fear of dogs. Examples of other kinds of the therapeutic effects are cited by Liebert, Neale and Davidson (1973), for example reduction of fear of the dentist by means of a simulated television programme and overcoming withdrawal behaviours of pre-school children.

Only recently has serious consideration been given to the possible pro-social effects of television. There is evidence that in experimental conditions film or television stimuli can influence sharing (Bryan and Walbek, 1970), self-control regarding delay of gratification and adherence to rules against cheating (Stein and Bryan, 1972). The above studies have all used specially prepared pro-social videotapes or films which were brief and focused very clearly on the relevant behaviours.

The studies all occurred within a laboratory setting and as such are subject to the limitations of experimental research. Field experiments on exposure to pro-social television content is sadly lacking, with the work of Stein and Friedrich (1972) being one of the exceptions. In their summer camp experiment conducted with pre-school children the subjects saw either Misterogers' Neighborhood, a pro-social programme, aggressive cartoons, or neutral programmes. In addition to recording aggressive behaviours, the observers also recorded three categories of pro-social behaviour, that is pro-social interpersonal behaviour, persistence and self-control. Each category was further divided into more specific behaviours, for example self-control included obedience and delay of gratification; pro-social interpersonal behaviour included co-operation, nurturance of others and verbalization of feelings.

The group exposed to pro-social behaviour increased in self-control whereas those in the aggressive condition decreased in self-control. With regard to interpersonal behaviour the effect tends to be greater for boys and for children from lower socio-economic families. Responses to frustration indicate that children in the pro-social condition did not show increased aggression with increased frustration to the same extent as children from the aggressive and neutral groups.

The available evidence suggests that pro-social programming can increase children's subsequent pro-social behaviour. However, there need to be many more studies employing typical television content and measures of naturally occurring pro-social behaviour in order to assess more clearly the potential influence of television on pro-social behaviour. This is especially true where cultural and socialization factors determine, as in the case of pro-social behaviours, what behaviours are expected according to the norms of society.

1.3 METHODOLOGICAL CONSIDERATIONS

No single method of social research can demonstrate satisfactorily a causal link between television and aggressive behaviour. Theoretically, when considered together, laboratory studies, field experiments and survey research should cancel out the methodological weaknesses of any single method. Laboratory studies have the advantage of controlling confounding variables and are therefore better at demonstrating cause and effect relationships. In practice, however, the nature of television research makes it virtually impossible to ensure absolute internal and external validity, for the simple reason that subjects are usually not completely television naïve and have often been subjected to prolonged exposure of the same kind of content as the stimulus materials.

Despite the fact that laboratory studies have shown repeatedly that watching television violence can make children more aggressive, the question of proof remains unanswerable. After the completion of studies costing over one million dollars, the US Surgeon General's Committee accepted the following interpretation: "The two laboratory and survey research sets of findings converge in three respects: a preliminary and tentative indication of a causal relation between viewing violence on television and aggressive behaviour; an indication that any such causal relation operates only on some children (who are predisposed to be aggressive); and an indication that it operates only in some environmental contexts" (Teevan, 1976, p. 92).

For the sake of truthfulness it should be stated that the Surgeon General's Committee has been severely criticised for having five of the twelve positions on the Committee filled by executives and consultants of the networks and for diluting, distorting and playing down some of the research findings in the report. During the Pastore hearings following the release of the Committee's report, the then Surgeon General, Steinfeld, made the following statement: "Certainly my interpretation is that there is a causative relationship between televised violence and subsequent antisocial behavior" (Liebert, Neale and Davidson, 1973, p. 155). There is a difference, however, between what one believes and what can be proved scientifically. Review of the literature reveals a number of objections to the methodology of studies on aggression and their findings.

1.3.1 Laboratory studies

One of the earliest and well-known studies, that of Bandura, Ross and Ross (1963) demonstrated that observing aggressive behaviour of a model towards a bobo-doll led to imitation of the aggressive behaviour whether it was a live model, a film of the model's behaviour or a cartoon simulation of the model. Films of the children's post-viewing behaviour indicate direct imitation even of such unlikely

verbal behaviour as "lickit-stickit" occurring during the 20 minute play period with toys including the bobo-doll. Response generalization also took place in that children exposed to modelling subsequently were more likely to play with aggressive toys such as guns, in spite of the fact that no gun appeared in the films.

The results have been replicated using both realistic and cartoon models with pre-schoolers (Bandura, 1965; Hanratty et al., 1969 and Ellis and Sekyra, 1972).

The findings of Bandura, Ross and Ross have been criticized on the ground that it is still a far cry from hitting a bobo-doll to aggression against humans. Hanratty et al. (1969) dressed an adult in a clown suit similar to that worn by the bobo-doll. Both studies report more aggression towards the bobo-doll than towards the human clown. However, whereas no children in the neutral condition engaged in any aggression towards the human clown, a number of children in the aggressive condition physically assaulted the human.

The following criticism against laboratory experiments seems to be valid: The experiments remain a laboratory situation which involves a complex set of procedures far removed from real life situations. The experimental condition could even induce aggressive behaviour by providing cues for imitative behaviour which seldom occur in real life.

Under laboratory conditions aggression is tolerated and even approved and since the ultimate responsibility is that of the experimenter the subjects are not inhibited by the normal restraints against aggression. With regard to the responsibility implied by the experimenter in laboratory studies, the original experiment by Milgram (1965) in which adult American males administered shocks, even to subjects complaining of a weak heart, within an experimental situation, should be kept in mind.

Liebert and Baron (1972) modified the shock treatment to a condition where children from nine to five years, after seeing either a violent film or a non-violent sport sequence, could either push a "hurt" or a "help" button. Children who saw the aggressive film were more willing to "hurt" than those seeing the non-aggressive film.

A variety of similar studies have been undertaken in which the experimental conditions have been varied. Experiments using different stimuli, different indicators of aggressiveness and different samples of subjects consistently indicate that viewing violence increases subsequent aggressive responses. A general finding seems to be that viewing negative consequences of aggressive behaviour inhibits subsequent aggressive responding (for example Berkowitz and Rawlings, 1963;

Berkowitz, 1965 and Collins, 1974). Conflicting results were obtained by Leifer and Roberts (1972) who found that comprehension of motives and consequences was dependent on age but that portrayal of motives and consequences had little effect on subsequent responding.

In summarising studies that used television programmes Collins (1974) concludes that when a television programme unambiguously portrays an aggressive actor as having undesirable motives and suffering negative consequences, children's subsequent aggressive responding is inhibited. If consequences are less explicitly presented disinhibition is more likely.

Other variables which influence subsequent aggressive responses include sex, initial level of aggression and corresponding cues in the viewing and performance situation.

Liebert and Baron (1972) found that second grade boys were more willing to press a "hurt" button than second grade girls. Leifer and Roberts (1972) reported an aggression analysis performed on data obtained from several studies, and consistently found a strong relationship between pre-viewing levels of aggression and aggressive responses. Berkowitz and Geen (1967) found that post-viewing aggressiveness increased to the extent that cues in the symbolic portrayal are present in the performance situation.

The majority of laboratory studies consistently point to the conclusion that television portrayal of violence leads to an increase in subsequent aggressiveness in performance. As indicated this conclusion is modified depending upon certain conditions such as the nature of the stimulus, personal factors such as initial aggressiveness, conditions eliciting a response and the measures of aggressiveness.

Despite the consistency and number of laboratory experiments, factors of external validity caution against generalization of the findings to television broadcasts in everyday life. These factors are: the laboratory studies often differ from day to day television viewing in important aspects. In the laboratory attention is ensured; stimuli are brief, focussed and could lack the plot and development of real programming. Prior exposure to normal television programming contaminates the experimental conditions and one can never be quite sure that residual effects do not manifest themselves within the response situation. In some cases sanctions against aggressive behaviour are removed in order to ensure adequate responses so that comparisons between conditions can be made.

1.3.2 Field Experiments

Field experiments attempt to measure the effects of television within natural field settings. Usually comparison groups are exposed to specific television diets or the content of television which the children are allowed to view is controlled. The effects are measured over a period of time through observation within the normal social situation of the child. Field experiments thus are not subject to the artificiality of laboratory experiments. They do suffer, however, from lack of control of confounding variables by the experimenter. Some such confounding variables may be that subjects might have had years of television exposure prior to the field experiment or that extraneous variables such as events occurring within the experimental period may effect the results. All in all, the field experiment is a more reliable method than the laboratory experiment for making generalizations about the possible effects of television.

Unfortunately, not many field experiments have been conducted. The well known studies of Feshbach and Singer (1971) and Wells (Liebert, Neale and Davidson, 1973) have already been discussed. A mixture of results was obtained with the Feshbach and Singer experiment, the only study to indicate a decrease of aggression after viewing aggressive content. The only consistent finding is that the effect of aggressive television content seems to be limited to more aggressive children. Unfortunately these studies were conducted in the United States, a television saturated society. This mixture of results, together with the arguments presented by Armor (1975) emphasise the need for further field studies. The opportunity for field studies prior to the introduction of television makes this type of research the logical choice for this study.

1.3.3 Correlational Surveys

The correlational method is employed to see whether two variables are related. In the case of television viewing, measures of violence viewing are usually correlated with aggressive behaviour. A variety of measures of violence viewing have been employed, ranging from the presence or absence of television in the home, total viewing time and preference for violent television content to actual programmes watched. The sensitivity of measures of aggressive behaviour also differs widely. Attitudes towards aggression, direct observation of behaviour, reports of behaviour by others, delinquent behaviour and involvement with the law are some of the ways in which aggressive behaviour have been operationalized.

To a large extent different findings can be attributed to differences in measurement of television exposure and measures of aggression. The earlier studies of Himmelweit, Oppenheim and Vince (1958) compared the behaviour of children who had television in their home with those who did not. Diaries, detailed question-

naires and interviews with parents were used as behavioral measurements. For measures of aggression teacher ratings were employed. No differences in aggression between viewers and non-viewers were found on the basis of these ratings.

Schramm, Lyle and Parker (1961) performed similar studies in the United States and Canada. Frequency of television viewing was correlated with attitudes towards aggression. In both the Himmelweit and Schramm studies aggression was related to availability of television and not to actual watching of aggressive content.

Studies which include actual programme preference and a variety of measures of aggressive behaviours include that of McIntyre and Teevan (1972), Robinson and Bachman (1972) and McLeod, Atkin and Chaffee (1972a and 1972b).

McIntyre and Teevan examined the viewing habits of 2 300 high school children from Maryland with measures of antisocial behaviour which included self-reports of aggressiveness, delinquent acts, defiance of parents, "deviant" political behaviour and involvement with law enforcement officers. When controlled for sex and race a weak statistically significant relationship between preference for violent programmes and deviant behaviours was obtained for White males only.

In a national sample of 1 500 adolescents Robinson and Bachman (1972) found a weak statistically significant positive relationship between violent programme preference and self-report of physical aggression. Their conclusion was that television violence probably facilitates aggressiveness for subjects who were already high in aggression.

More convincing results were obtained by McLeod, Atkin and Chaffee (1972a, 1972b). In surveys conducted among 473 adolescents in Maryland and 151 in Wisconsin, information on violence viewing, self-report measures on aggression, evaluation of aggression by others and demographic information was obtained. Positive relationships were obtained between preference for violent programmes and the various measures of aggression. These relationships, although reduced, held when the effect of such variables as total viewing time, family socio-economic status and school performance were partialled out.

One more correlational study should be mentioned. In an earlier study Eron (1963) determined the amount of violence viewing and aggression of 875 third-grade children. An index of television violence viewing was obtained from an interview with each child's mother. An aggression score was obtained by peer ratings. Lefkowitz et al. (1972) ten years later again obtained information about violence viewing and aggression for 460 of the original 875 subjects. The same measuring of aggressiveness based on peer ratings was maintained whilst violence viewing was based upon the child's own report. Using time-lagged proce-

dures, a positive relationship was obtained between violence viewing in the third grade and measures of aggression 10 years later.

No significant correlation was obtained between aggression in the third grade and aggression in Grade 13 when the boys were nineteen.

A methodological problem inherent in correlational field studies is the fact that nothing can be said about causality on the basis of these findings. The studies cannot rule out third variables as causing both preference for violent television programmes and aggressive behaviour. Chaffee (1972) observes that the only consistent conclusion to be drawn from the correlational studies is that there is evidence for a weak to moderate relationship between preference for violent television content and adolescent aggressiveness for White males only.

The significance of the correlational studies is summarized by Teevan (1976) as follows: "Significant relationships between exposure to TV violence and aggression are reported. This significance, however, refers to statistical significance, not to be confused with either theoretical or practical significance. My study showed correlations of .15 statistically significant (meaning we could generalize to the non-sampled population) but these figures mean that TV violence can explain only 2,25% of the variance in aggressive behavior, and other factors explain or account for 97,75% of variance! Even the Lefkowitz et al. correlation of .31 explains less than 10% of variance in aggressive behavior" (p. 93). With regard to the effect of third variables, Teevan (1976) remarks: "In the Lefkowitz et al. study with its time-lagged correlation, they argue that television watching in Grade 3 causes aggression in Grade 13. Is it not possible that being from a broken home causes boys to be aggressive and to watch violent TV in Grade 3, and that other boys protected by their parents do not engage in such behaviour? By Grade 13, however, all boys watch violent TV, parents are irrelevant but only the boys from broken homes are aggressive. Hence the relationship between TV violence and behaviour would disappear in Grade 13" (p. 93).

1.4 THE NEED FOR AND AIM OF THIS STUDY

At least some experimental support exists for each of the various theoretical viewpoints on the possible effects of television. It is therefore difficult to choose between any of these views.

By far, the most consistent evidence that watching aggressive television content increases aggressiveness has been obtained by means of laboratory experiments. This finding is modified depending upon certain conditions such as the nature of the stimulus, for example whether violence is portrayed as punished, personal factors such as initial aggressiveness, conditions eliciting a response and the

measures of aggressiveness. As indicated these findings should be tempered by the valid reservations against laboratory experiments.

Field experiments approximate natural conditions. Unfortunately there is a serious lack of field experiments conducted with regular television programming as stimulus material. This is true of the effects of aggressive content as well as of pro-social content. Despite severe criticism, the catharsis hypothesis is still with us, and there is evidence that the effects of television are at least partly determined by socialization and cultural factors. One problem with most field experiments is that the results were obtained in television-saturated societies like the United States. A general conclusion of the existing field experiments is that increased aggressiveness following the viewing of aggressive content is limited to boys who were above average in initial aggressiveness. Existing evidence from the United States also suggests that younger children react differently from older children on television violence. Such an effect may be due to previous television exposure or to developmental or socialization effects, or more likely to interaction of all these factors.

The available evidence suggests that pro-social programming might increase children's subsequent pro-social behaviour. As in the case of aggressive behaviour, such an increase is possibly determined by cultural and socialization factors.

The only consistent conclusion to be drawn from the correlational studies is that there is evidence of a weak relationship between preference for violent television content and adolescent aggressiveness for White males only.

Introduction of television in South Africa provided the last opportunity to assess the effects of television in an industrialised Western society on television naïve subjects. Cost and time limitations made it imperative that the maximum advantage should be derived from this last opportunity. The logical method for such a study seemed to be the field experiment. The design of the field experiment allowed for the testing of the effects of pro-social, neutral and aggressive content on children with a variety of measuring instruments; the hypotheses tested being that viewing aggressive, pro-social and neutral television programmes will differentially influence subsequent aggressive and pro-social behaviours and attitudes.

CHAPTER 2

METHOD

2.1 INTRODUCTION

Broadly speaking the study can be described as three long-term field experiments in which groups of children saw various diets of American television programmes over a period of about four weeks. Natural behaviour was observed and recorded by means of a behaviour rating scale both before and after the viewing of the programmes. Other paper and pencil measuring instruments were also employed.

The investigation was conducted during 1975 in two provinces in South Africa, namely the Transvaal and the Cape Province. The Transvaal study involved subjects in Standards 3 to 5, that is, the ages of the pupils varied approximately from 11 to 13 years. Two age groups were used in the Cape Province, namely a nursery school group (5 to 6 years old) and a Standard 1 group (\pm 8 years old).

2.2 THE CHILDREN INVOLVED

2.2.1 Subjects in the Transvaal (Standards 3 to 5)

The subjects were 695 schoolchildren drawn from six schools in the Transvaal. Of these, 374 were boys and 321 were girls. Both Afrikaans and English-speaking pupils were included, but only those in Standards 3 to 5. As will be described later on in this chapter, the subjects were divided into four experimental groups. The number of Afrikaans and English boys and girls in each group is given in Table 2.1. The English-speaking subjects included a number of children who also spoke another language (such as Portuguese or Yiddish) at home, and therefore these pupils are called "English/other" in the table.

TABEL 2.1
SUBJECTS IN THE TRANSVAAL

Experimental group	Subjects				Total
	Afrikaans		English/other		
	Boys	Girls	Boys	Girls	
A	49	53	39	34	175
B	50	53	43	29	175
C	51	46	44	33	174
D	53	48	45	25	171
TOTAL	203	200	171	121	695

While planning the experiment, it was decided that all the children who were to take part, would be pupils in Transvaal primary schools. The first step therefore, was to obtain the necessary permission from the Committee of Educational Heads and the Transvaal Educational Department. After this was done, the next step was to decide what type of school would be most suitable. One important consideration influencing the size of the schools that could be used, was the lack of time in which to conduct the experiment. The introduction of television broadcasts in South Africa was scheduled for January 1976, and in addition brief test broadcasts in the Johannesburg area were due to start a few months before the introduction of the full service. This meant that using very small schools for the study would be impractical, especially since it was intended to involve as many television naïve children as could possibly be accommodated in the time available. Schools with hostels were also deemed more suitable because they had the advantage that programmes could be shown in the hostels themselves and large and regular audience attendance figures could be expected. Furthermore, as boys as well as girls were needed, co-educational schools would be better than separate schools for boys and girls.

With these considerations in mind, a list of all the suitable co-educational primary schools in Transvaal was compiled. Only schools with hostels were taken into account, and only schools with more than 200 pupils. The next step was to approach the principal of each school, to gain his or her co-operation and to ascertain how many English and Afrikaans boys and girls there were in the Standard 3, 4 and 5 classes. This information was used in deciding which schools to incorporate into the experiment. In view of the shortage of time and limited amount of videocassette equipment available, it was estimated that only six of the schools on the list could be used. By comparing all the possible combinations of six schools, the six most suitable schools were found. All of them happened to be situated in the northern and eastern Transvaal. The parents of potential subjects in these six schools were approached and their written consent to permit their children to take part in the investigation was obtained.

2.2.2 Subjects in the Cape Province (Nursery School)

The subjects were all the children (N = 95) enrolled in the A.C.V.V. (Afrikaanse Christelike Vrouevereniging) Nursery School in Stellenbosch. It is a private school run by the above-mentioned women's organisation, partly subsidised by the Government. The staff consists of fully qualified nursery school teachers. The majority of the pupils are Afrikaans-speaking. Before the project was started it was discussed with the president of the A.C.V.V. in Stellenbosch and the principal of the school, and their permission for the project was acquired. At a parent-teacher meeting the importance of research of this kind was explained, as well as the proposed project. Any parent who felt that their child/children

could not take part in the study, was invited to discuss the matter with the researchers. At this point none of the parents withdrew their children.

2.2.3 Subjects in the Cape Province (Standard 1)

The subjects were all the Standard 1 pupils (N = 105) enrolled in the Hendrik Louw Primary School in the Strand. The majority of the subjects were Afrikaans-speaking.

The Human Sciences Research Council acquired the official permission for the project from the Department of Education of the Cape Province, and after discussing the project with the principal, his permission was also obtained.

2.3 THE TELEVISION PROGRAMMES USED

2.3.1 Origin and type of programme

As the experiment was conducted before the introduction of television broadcasts in the country, no locally made programmes were available for use. This meant that only programmes from abroad could be shown, and that they would have to be in English. All programmes eventually obtained came from the United States of America, where they were recorded on videotape by the American researchers mentioned in the preface.

Only programmes suitable for children were considered eligible for inclusion in the study. It was also decided that fiction programmes would be more suitable than news programmes (which would inevitably include local material unintelligible to the South African children). A total number of 281 programmes representing 176 hours of broadcasting was recorded in this way. However, of these programmes, only 54 hours were finally used. Although originally recorded in colour, the differences between the American (NTSC) and South African (PAL) television systems resulted in all programmes being shown in black and white.

2.3.2 Content analysis of the programmes

All the programmes recorded in the USA were subjected to a content analysis by a team of trained American coders. Scores were assigned to programmes on each of the following aspects of programme content:

- (i) Occurrence of aggressive acts. Aggression was defined as the use of force, threat of force, or intent of force against another person or animal. Included were hitting, shooting, knifing, verbalization, or other indications of intent to commit an aggressive act.

- (ii) Occurrence of pro-social acts of altruism. These included acts of sharing, helping and co-operation.
- (iii) Occurrence of pro-social acts of delay of gratification and task persistence.
- (iv) Occurrence of pro-social acts of reparation for bad behaviour.
- (v) Occurrence of pro-social acts of sympathy, with sympathy defined as a verbal or behavioural expression of concern for others and their problems.
- (vi) Occurrence of pro-social acts of control over aggressive impulses.
- (vii) Occurrence of pro-social acts of explaining feelings of self or others.
- (viii) Occurrence of pro-social acts of resistance to temptation.

Each programme was coded independently by two coders. After 45 programmes were analysed, inter-coder reliability was measured by calculating Pearson r . For occurrence of aggressive acts r was 0,88 and for occurrence of all pro-social acts together r was 0,63.

After all the programmes were coded they were divided into three programme types namely the aggressive, the pro-social and the neutral programmes. Programmes of the aggressive type had to contain less than 15 pro-social and 6 or more aggressive acts. To qualify for inclusion in the collection of pro-social programmes, a programme had to contain 15 or more pro-social acts and less than 2 aggressive acts. The third (neutral) type consisted of programmes with less than 2 aggressive and less than 15 pro-social acts. Programmes not conforming to any of these criteria were not classified and therefore disqualified from further use.

2.3.3 Final selection of programmes

After the content analysis of the programmes each programme was viewed again in the USA in order to select those programmes most suitable for children. Possible cultural differences between South African and American children were also kept in mind. Of the 176 hours originally recorded, 80 hours of programmes were eventually selected and sent to South Africa. This was done with the approval of the Director of Publications. On arrival they were rerecorded on videocassettes and then subjected to a similar screening procedure at the Rand Afrikaans University. Factors taken into account during this second screening were:

- a. Suitability for children.
- b. Complexity of theme and use of language.

- c. Judged amount of action in the content and the interest aroused by each program.
- d. Cultural factors that could influence the impact of the programme on children in South Africa.

The final step in the selection of the programmes was to display the 60 hours of programming passed by the second screening process, to representatives of the Transvaal Education Department for their approval. Objections were raised against two of the programmes, and consequently these were not used. The final pool consisted of three sets of programmes (the aggressive, pro-social and neutral programmes), each containing 18 hours of material recorded on one hour videocassettes. During the field experiment these three sets formed the three television diets shown to the subjects.

2.4 THE MEASURING INSTRUMENTS

For all subjects scores were obtained on the following measuring instruments: the Behaviour Rating Scale, the Picture Projection Test (PPT) and the Picture Situation Test (PST). Additional information about the subjects' prior exposure to television, their self-reported emotional reaction to the programmes shown to them, and in the Cape Province, their behaviour both during and immediately after the viewing of the programmes, was recorded on appropriate forms. All measuring instruments and forms were available in English and Afrikaans.

2.4.1 The Behaviour Rating Scale

The Behaviour Rating Scale is a collective name for four scales that, for the sake of convenient administration, were administered as one measuring instrument. The scales provide indications of children's aggressive and pro-social behaviour toward peers and toward people (usually teachers) in authority. In this study the behaviour of the children was always observed and rated by someone who knew the children well. An observation period of one week was used as basis for the ratings. The subjects themselves did not know what aspect of their behaviour was being studied.

Section A of the measuring instrument as originally administered contained 20 items or acts relating to aggressiveness. The task of every rater was to indicate whether, during the week under consideration, the child being observed had been guilty of these acts. Aggressive behaviour toward peers and toward people in authority was rated separately. In both cases, ratings of either "never", "seldom", "often", or "unknown" could be recorded on every item. Section B contained 19 items relating to pro-social behaviour. Acts such as helping, sharing, sympathising, persevering and co-operating were considered to be pro-social. As

in Section A, behaviour toward peers and toward authority was measured separately.

The measuring instrument as a whole therefore yielded scores on four types of behaviour, namely aggression toward peers, aggression toward authority, pro-social behaviour toward peers and pro-social behaviour toward authority. In each case, scores of 1, 2 and 3 were awarded to items marked "never", "seldom", and "often" respectively, while all "unknown" answers were weighted with a score of 2. Total scale scores were obtained by adding the relevant item scores. No total scale scores were calculated for those cases in which five or more items on a scale were marked "unknown".

The before and after type design used in this study permitted item analyses and the calculation of Kudor-Richardson reliability estimates from the results of the "before" testing phase. For each scale this was done separately with regard to three groups of subjects, namely the Standard 3 to 5 pupils in the Transvaal, the Standard 1 pupils in the Cape, and the Cape nursery school children. In the case of the Transvaal subjects, the items analyses yielded satisfactory correlations between item scores and total score on all four scales, and consequently all items were retained for further analysis. For the Cape subjects, one item on the "aggression toward authority (Standard 1 as well as nursery school children)" scale, two items on the "aggression toward peers (Standard 1 pupils)" scale and one item on the "pro-social behaviour toward authority (nursery school children)" scale were discarded for having correlations lower than 0,2. In all cases, the reliability estimates based on the retained items were high, the lowest being 0,861 (see the estimates for the first four scales in Table 2.2).

TABLE 2.2
RELIABILITY ESTIMATES

Scale	Transvaal subjects*	Cape Province subjects**	
	(Standards 3-5)	Standard 1	Nursery school
Aggression toward peers	0,945	0,944	0,952
Aggression toward authority	0,932	0,861	0,885
Pro-social behaviour toward peers	0,937	0,931	0,954
Pro-social behaviour toward authority	0,946	0,901	0,927
Picture Projection Test	0,587	0,754	0,779
Picture Situation Test	0,892	0,918	0,754

*Kudor-Richardson - 20 reliability estimates

**Kudor-Richardson - 8 reliability estimates

2.4.2 The Picture Projection Test for Aggression (PPT)

As can be deduced from its name, the Picture Projection Test for Aggression (PPT) is a measuring instrument devised for measuring projected aggression. The children filling in this test during the course of the experiment did not know this however, as the words "for aggression" were not printed in the title of the booklets handed to them.

In its original form, the PPT contained 34 items. Complete instructions and a few biographical questions about the subjects were also included. Each item consisted of an ambiguous hand-drawn picture, usually depicting match stick figures performing some act. Two alternative typed explanations were given of what was happening in the picture, and of these one always referred to or described an aggressive act. The task of the subjects was to indicate the most plausible of the two explanations by means of a cross. If the aggressive alternative was chosen, this counted for a score of 1; if the other explanation was chosen, no score was awarded. No time limit was set for completing the test.

As in the case of the Behaviour Rating Scale described in Section 2.4.1 the before and after type of design used in this study permitted item analyses and the calculation of reliability estimates for all three groups of subjects. With regard to the items analyses, point-biserial correlations between item scores and total scores were computed. A correlation lower than 0,2 was usually considered sufficient grounds for discarding that item. In this way 4 of the 34 items administered to the subjects in the Transvaal were eliminated. In the case of the Standard 1 and nursery school subjects in the Cape, 5 and 6 items were discarded respectively. This meant that the PPT in its final form, that is the measuring instrument used in the analyses of this study differed slightly from group to group. Kuder-Richardson reliability estimates for all cases are given in Table 2.3.

2.4.3 The Picture Situation Test (PST)

The Picture Situation Test is a measuring instrument designed to measure aggression in children along the general lines proposed by Aimeé Leifer and Donald Roberts (1972). The concept of response hierarchy features prominently in this technique. The assumption underlying this concept is that when a person in a conflict situation has a number of different responses available to him or her, these alternatives can be placed in a hierarchy ranging from the most probable to the least likely response. For example, two children who outwardly react similarly to a stimulus, would in fact have different response hierarchies if for child A an aggressive response were the next most likely reaction, whereas child B would perform a number of other responses before resorting to aggression. It is this difference in willingness to engage in aggressive activity, even if only

at the level of second or third choice of response, that is reflected by PST aggression scores.

The PST in its original form and as administered to the subjects of this study, contained 16 items. Each item consisted of a description of an everyday conflict situation familiar to children, as well as three illustrated types of responses grouped together and presented as three different pairs. The task of the subjects was to indicate which response in every pair they personally would most likely perform in such a situation. This meant that three choices had to be made for every item. The following three types of responses, all of which were illustrated by means of drawings of match figures, were involved:

- a. An aggressive response (either verbal or physical).
- b. A pro-social response which in some way indicated coping with the situation other than by means of aggression.
- c. An escape response in which avoidance of the conflict by leaving the scene of the action was advocated.

The number of times a subject chose the aggressive response rather than the pro-social or escape response determined the aggressive score for that item. The total aggression score for every subject was obtained by adding all the item scores. As in the case of the measuring instruments mentioned in the preceding section, these scores were used to perform item analyses and to calculate reliability estimates (see Table 2.3). As a result of the item analyses, it was decided to retain all items for subjects in the Transvaal, but to discard one item with regard to the further analyses of results obtained from those children in the Cape Province.

2.5 THE GENERAL RESEARCH DESIGN

The experiment was designed to be conducted in three stages, namely the initial testing of the subjects (on the Behaviour Rating Scale, the PPT and the PST), the exposure to the diets of television programmes, and the final testing. The additional information about the subjects' prior exposure to television, their self-reported emotional reaction, and in the Cape Province, additional observations of their behaviour during and after the viewing of the programmes, were not part of the general design of the pre-post measures. Before the initial testing could start, every child taking part was divided into one of four groups of approximately equal size. This was done by means of a balloting system in every class of every school, and in this way it was ensured that no group was disproportionately loaded with any variable such as age, sex and class teacher.

As has been described in preceding sections of this chapter, three programme diets were selected to show to the subjects. On account of their content as determined by means of a content analysis, these three diets were called the aggressive, pro-social and neutral diets respectively. Each programme diet contained 18 hours of programming that was to be viewed at a rate of one hour a day. A number of weeks were needed to show all the programmes. The aggressive programme diet was shown to subjects in one group while the pro-social and the neutral programmes were viewed by two other groups. The fourth group was the control group and its members saw no programmes at all. Care was taken that a child belonging to a certain group saw only those programmes (if any) prescribed for that group.

During both testing sessions, that is before and after the viewing of the programmes, the same measuring instruments were used. Two sets of data over all four groups of subjects were therefore obtained. This had several advantages, for besides enabling the comparison of the results of the four groups on the final testing session, differences between the groups on the initial testing could also be ascertained and taken into account. The statistical technique of covariance-analysis was used to this end. Scores obtained during the first testing stage were also used for refining the measuring instruments by means of items analysis. Kuder-Richardson 8 and 20 reliability estimates could be calculated, or alternatively by comparing the "before" and "after" scores of the control group, test-retest reliability could be investigated. Due to inherent shortcomings in the latter type of reliability (Anastase, 1961) it was decided to compute only Kuder-Richardson estimates.

2.6 THE PROCEDURES FOLLOWED

2.6.1 The procedure followed in the Transvaal

As mentioned in the preceding sections, before the experiment could start, permission had to be obtained from various quarters with regard to the participation of the pupils and the type of programme to be shown. Official sanction also had to be obtained for teachers to assist. After all these negotiations had been completed, each school was visited and the teachers helping out were given all the relevant instructions and information. In some cases this training session for teachers lasted up to a day. A typed manual specifying in detail what had to be done, was provided, and in addition the working of the electrical apparatus was explained and demonstrated. At each school this apparatus consisted of 3 videocassette players, 3 video monitors, 54 hours of recorded programmes on one hour cassettes, and the necessary cables and leads for connecting and installing the monitors and cassette players.

The first task of the teachers in each school was to divide the subjects into four

groups of approximately equal size by means of a system of balloting. The four groups were labelled group A, B, C and D respectively. Each subject was given an identity number, and a list of numbers specifying the subjects in each group was compiled.

Once group membership had been assigned, the initial testing started. The behaviour of the subjects was observed by the teachers for a period of one week, after which the Behaviour Rating Scale was filled in with regard to every child. Information about the pupils' background and possible prior exposure to television was also obtained. Only results of television-naïve children were to be taken up in the final analysis. The measuring instruments filled in by the subjects themselves at the end of this week included the Picture Projection Test (PPT) and the Picture Situation Test (PST). Identity numbers were used on all the measuring instruments instead of names.

The next stage was the actual viewing of the programmes by the subjects of groups A, B and C. Group A was shown the aggressive programme diet, group B the pro-social diet, and group C the neutral diet. Group D was the control group, and no programmes were shown to subjects in this group. Three classrooms were required for the viewing of the diets, that is one for each group. In each classroom programmes were shown during afternoons at a rate of one hour a day, four days (Monday to Thursday) a week. Friday afternoons and weekends were not used. Approximately 4 to 5 weeks were therefore needed to see all 18 hours of a programme diet. Enough television apparatus was available to enable the simultaneous showing of all the diets at three schools. Every videocassette used was clearly marked with either an A, B or C, as well as a number ranging from 1 to 18. The A, B or C was an indication of the audience or group that the recording was intended for, and the number referred to the order of presentation. After each cassette was viewed, subjects were asked to fill in a form about their views on and reactions to the recorded material just seen.

On completion of the viewing of all the programmes, the final testing commenced. All the subjects were again asked to fill in the measuring instruments used in the initial testing. The behaviour of the children, including those in the control group D, was again observed for a week by the same teachers and then recorded by means of the Behaviour Rating Scale.

2.6.2 The procedure followed in the Cape Province

The same television programmes and apparatus used in the Transvaal study, were utilized for both studies in the Cape Province. The same basic procedure was also followed with regard to the viewing of programme diets and the random assignment of subjects to four experimental groups. In both studies in the Cape Province,

ratings by the subjects' parents on the Behaviour Rating Scale were also obtained.

In the case of the nursery school study, for practical reasons, two sessions of programmes were shown every day. This meant that the children were divided into eight groups of eleven or twelve each (2 X 4 experimental groups). The children from two classes came to the first session and the other two classes to the second. While the experimental groups watched the programmes, one of the teachers continued with other school activities like singing, playing and storytelling with the control group. Soon after the experiment was started, one parent complained that her child was so scared by the programmes (she was seeing the aggressive content) that she would not sleep in her own room any longer. This child was immediately removed from the group and did not take part in the rest although she was post-tested with the rest of the children. Another parent filed an academic complaint about children being affected badly by the aggressive programmes but did not complain about her own child who was in the pro-social group. In order to avoid more problems, the experiment was stopped after each subject had seen 17 instead of 18 programmes.

With regard to the additional information on behaviour during and after the viewing of programmes, each experimental group was observed by two objective observers who were either graduate students in psychology or part time teachers who were used to working with children. Each of the observers did a training session in rating the children's reactions and as soon as a correlation of 0,8 or higher was reached with the ratings of an already trained observer, the observer was considered as reliable.

The observers were rotated in such a way that they spent the same number of days with each group. Every morning the observers first watched the programme they planned to show that day themselves in order to be able to observe the children (and not the programme) during the actual experiment. While the children were watching the programme, the observers recorded their reactions on a 14 point scale. During the first half of the programme, one observer would watch five or six of the children and the second observer would watch the rest. During the second half of the programme they would change and each would observe the other five or six children. Upon completion children were asked whether they liked the programme or not. After having watched the programmes, a ten to fifteen minute play period was allowed. Depending on weather conditions, this was done either in the outdoor play area or in one of the school classrooms. Free play was allowed with as little structuring by the observers as possible. The children's reactions during this period were also recorded on a scale. Again one observer watched half of the children for the first period while the other one watched the rest and during the second half they switched. Even during this play period, children were kept separate from the other groups to minimise effects of interaction with the other groups.

CHAPTER 3

RESULTS OF THE EXPERIMENT IN THE TRANSVAAL

3.1 INTRODUCTION

In the previous chapter it was described how scores on each measuring instrument were obtained. This was done for all the subjects both before and after the viewing of the television programmes. In spite of the random allocation of subjects to the experimental groups, on some measuring instruments the group mean scores of the initial testing phase (the "before" scores) differed in some cases. The same applied to the subdivisions of subjects (namely boys, girls, subjects with Afrikaans as a home language, subjects with English/other as a home language) in which comparisons between the four experimental treatments were drawn. This meant that differences in the mean "after" scores could not be ascribed solely to the influence of the experimental treatments. The statistical technique of covariance-analysis was used to counter this problem. By considering the "before" scores to be covariate of the "after" scores, corrected "after" scores were obtained which made provision for such pre-existing differences. Differences in these corrected scores could therefore be taken as an indication of the differential effects of the experimental treatments.

Analyses of variance (F-tests) were used to investigate possible differences between the "before" scores as well as between the corrected "after" scores. The null-hypothesis was rejected on the 5 per cent level of significance. When this happened in the case of the corrected "after" scores, further tests, namely two-tailed \bar{z} -tests for the difference between two means (Guilford, 1965) and Sheffé F_S -tests (Huysamen, 1976) were employed to investigate the six differences between the four group means involved. The Sheffé F_S -values were computed to check whether the results obtained with the \bar{z} -tests were not an artifact of one particular statistical approach. However, in all cases the F_S - and \bar{z} -tests yielded similar results. Here too, the hypothesis of no difference was rejected on the 5 per cent level.

When two corrected means were found to differ significantly, the direction of this difference was determined by means of inspection of the tables appearing in this chapter. These tables provide information regarding original and corrected scores, as well as the relevant F-, F_S - and \bar{z} -values. The results pertaining to each measuring instrument are presented separately. Additional data on the subjects' self-reported emotional reaction to and liking of the television programmes viewed, are also given.

3.2 THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD PEERS

The mean scores of subjects on this measuring instrument, as well as the F-values with which differences between the four experimental treatments were investigated, are given in Table 3.1. Significant differences of this kind on the corrected "after" scores were found for all the subjects together, as well as for the boys and the Afrikaans-speaking subjects separately. With regard to all the subjects as a whole, the aggressive, pro-social and control groups displayed about an equal amount of aggression toward peers (see Table 3.2). Subjects that had seen the neutral programmes, however, were significantly less aggressive toward peers than those in either the aggressive, pro-social or control groups. The same pattern of significant differences was found for the Afrikaans-speaking subjects (Table 3.3). Boys in the neutral group (see Table 3.4) also showed less peer aggression than boys who had received the pro-social and control treatments.

From these findings it would therefore seem possible to conclude that the only programmes that influenced the children's overt aggression toward one another were those with a neutral content. It is not clear why this should be so. One possible explanation is that these programmes, although being neutral in terms of aggressive or pro-social behaviour, were relatively high in another content category such as humour and that this high content led to the observed reduction of aggression toward peers. More light is shed on this possibility in Section 3.8.

3.3 THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD AUTHORITY

As can be deduced from the F-values in Table 3.5, significant differences were found between the corrected "after" scores of the four experimental groups as a whole, and also in the case of the boys, the girls and the Afrikaans-speaking subjects respectively. The significant F-value on the "before" scores of all the subjects confirms the necessity of applying the analysis of covariance technique to obtain corrected "after" scores.

The general pattern that emerges from these corrected scores of all the subjects as a whole (Table 3.6) is that after seeing the programmes, those children in the pro-social group were more aggressive toward authority than those in any of the other three groups. The F_s - and \bar{z} -values in Table 3.7 reflect the same trend for the boys that took part in the experiment. The only significant difference found with regard to the girls taking part, namely more aggression toward authority in the pro-social than in the neutral group, is also in line with this general pattern (see Table 3.8).

TABEL 3.1

MEAN SCORES OF SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD PEERS

Groups		Scores				F-values
		Mean scores of groups				
Subjects	Testing phase	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
All	Before	29,102	30,017	29,235	29,640	0,222
All	After (original)	29,857	31,405	27,870	31,514	-
All	After (corrected)	30,127	31,047	28,050	31,415	5,862**
Boys	Before	30,224	31,516	31,095	30,892	0,183
Boys	After (original)	30,672	32,984	28,921	32,831	-
Boys	After (corrected)	31,144	32,809	28,824	32,865	4,173**
Girls	Before	28,017	28,296	27,260	27,870	0,122
Girls	After (original)	29,067	29,593	26,860	29,652	-
Girls	After (corrected)	28,965	29,290	27,305	29,656	1,489
Afrikaans	Before	27,844	30,308	26,862	28,358	1,810
Afrikaans	After (original)	27,896	30,218	24,631	29,716	-
Afrikaans	After (corrected)	28,311	28,830	25,765	29,755	5,775**
English/other	Before	30,892	29,818	32,902	34,448	1,440
English/other	After (original)	33,189	33,030	33,244	36,241	-
English/other	After (corrected)	33,768	34,190	32,737	34,899	0,567

**Significant on the 1 per cent level

TABEL 3.2

DIFFERENCES IN CORRECTED MEAN SCORES OF ALL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD PEERS

Experimental treatment		Difference in scores (treatments X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F _S -values
Aggressive	Pro-social	-0,920	-1,070	0,746
Aggressive	Neutral	2,077	2,383*	3,786*
Aggressive	Control	-1,288	-1,465	1,431
Pro-social	Neutral	2,997	3,424**	7,816**
Pro-social	Control	-0,368	-0,417	0,116
Neutral	Control	-3,365	-3,803**	9,640**

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABEL 3.3

DIFFERENCES IN CORRECTED MEAN SCORES OF BOYS ON THE BEHAVIOUR RATING SCALE MEASURING
AGGRESSION TOWARD PEERS

Experimental treatment		Difference in scores (treatments X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F _s -values
Aggressive	Pro-social	-1,465	-1,111	0,824
Aggressive	Neutral	2,320	1,765	2,083
Aggressive	Control	-1,721	-1,320	1,165
Pro-social	Neutral	3,785	2,953**	5,727**
Pro-social	Control	-0,256	-0,200	0,027
Neutral	Control	-4,041	-3,165**	6,685**

**Significant on the 1 per cent level

TABLE 3.4

DIFFERENCES IN CORRECTED MEAN SCORES OF AFRIKAANS SUBJECTS ON THE BEHAVIOUR RATING SCALE
MEASURING AGGRESSION TOWARD PEERS

Experimental treatment		Difference in scores (treatments X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F _s -values
Aggressive	Pro-social	-0,519	-0,561	0,210
Aggressive	Neutral	2,546	2,624**	4,298**
Aggressive	Control	-1,444	-1,501	1,508
Pro-social	Neutral	3,065	3,169**	6,748**
Pro-social	Control	-0,925	-0,964	0,623
Neutral	Control	-3,990	-3,979**	10,556**

**Significant on the 1 per cent level

TABLE 3.5
MEAN SCORES OF SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD
AUTHORITY

Group		Scores				F-values
		Mean scores of groups				
Subjects	Testing phase	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
All	Before	25,790	24,618	23,197	24,913	3,173*
All	After (original)	25,479	26,559	22,574	24,875	-
All	After (corrected)	24,613	26,554	23,612	24,653	6,817**
Boys	Before	25,831	25,123	23,406	25,600	1,719
Boys	After (original)	25,542	27,000	22,672	25,533	-
Boys	After (corrected)	24,866	26,872	23,873	25,036	3,873**
Girls	Before	25,750	23,978	23,071	23,977	1,614
Girls	After (original)	25,417	26,000	22,554	23,977	-
Girls	After (corrected)	24,385	26,186	23,364	24,164	2,764*
Afrikaans	Before	24,986	24,781	22,771	24,393	1,635
Afrikaans	After (original)	24,514	26,172	21,629	24,557	-
Afrikaans	After (corrected)	23,907	25,728	22,779	24,421	5,118**
English/other	Before	26,810	24,281	24,116	27,741	2,202
English/other	After (original)	26,690	26,313	24,023	27,370	-
English/other	After (corrected)	26,001	27,086	24,891	26,143	1,029

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABLE 3.6
DIFFERENCES IN CORRECTED MEAN SCORES OF ALL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD AUTHORITY

Experimental treatment		Difference in scores (treatment X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F _s -values
Aggressive	Pro-social	-1,941	-2,937**	5,785**
Aggressive	Neutral	1,001	1,586	1,768
Aggressive	Control	-0,040	-0,061	0,003
Pro-social	Neutral	2,942	4,477**	13,472**
Pro-social	Control	1,901	2,785**	5,173**
Neutral	Control	-1,041	-1,592	1,702

**Significant on the 1 per cent level

TABLE 3.7

DIFFERENCES IN CORRECTED MEAN SCORES OF BOYS ON THE BEHAVIOUR RATING SCALE MEASURING
AGGRESSION TOWARD AUTHORITY

Experimental treatment		Difference in scores (treatments X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F _S -values
Aggressive	Pro-social	-2,006	-2,211*	3,962**
Aggressive	Neutral	0,993	1,128	1,093
Aggressive	Control	-0,170	-0,190	0,030
Pro-social	Neutral	2,999	3,372**	9,612**
Pro-social	Control	1,836	2,033*	3,378*
Neutral	Control	-1,163	-1,325	1,521

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABLE 3.8

DIFFERENCES IN CORRECTED MEAN SCORES OF GIRLS ON THE BEHAVIOUR RATING SCALE MEASURING
AGGRESSION TOWARD AUTHORITY

Experimental treatment		Difference in scores (treatments X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F _S -values
Aggressive	Pro-social	-1,801	-1,835	2,291
Aggressive	Neutral	1,021	1,105	0,814
Aggressive	Control	0,221	0,224	0,034
Pro-social	Neutral	2,822	2,833**	5,412**
Pro-social	Control	2,022	1,917	2,448
Neutral	Control	-0,800	-0,798	0,431

**Significant on the 1 per cent level

TABLE 3.9

DIFFERENCES IN CORRECTED MEAN SCORES OF AFRIKAANS SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD AUTHORITY

Experimental treatment		Difference in scores (treatment X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F _s -values
Aggressive	Pro-social	-1,821	-2,412*	3,894**
Aggressive	Neutral	1,128	1,529	1,560
Aggressive	Control	-0,514	-0,672	0,303
Pro-social	Neutral	2,949	3,880**	10,063**
Pro-social	Control	1,307	1,663	1,840
Neutral	Control	-1,642	-2,133*	3,050*

*Significant on the 5 per cent level

**Significant on the 1 per cent level

Three significant differences between corrected mean scores were found among the four groups of Afrikaans-speaking subjects (see Table 3.9). Afrikaans-speaking subjects in the pro-social group were more aggressive than those who had watched either the aggressive or neutral programmes. This is also in accordance with the findings mentioned above. The third significant difference was found between the neutral and control groups: Afrikaans-speaking subjects who had seen neutral programmes were judged to be less aggressive toward authority than those who had seen no programmes at all. This finding resembles those found with regard to aggression toward peers (see Paragraph 3.2.1).

3.4 THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR TOWARD PEERS

Although some significant differences on the "before" scores were found with regard to this measuring instrument, there were no significant differences between the corrected "after" scores of the four experimental groups (see Table 3.10). This applied to the subjects as a whole as well as to the various subdivisions of subjects according to home language and sex.

TABLE 3.10
MEAN SCORES OF SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR
TOWARD PEERS

Group		Scores				F-values
		Mean scores of groups				
Subjects	Testing phase	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
All	Before	46,840	45,287	45,722	42,024	4,189**
All	After (original)	44,813	43,925	44,139	43,048	-
All	After (corrected)	43,561	43,680	43,612	44,918	0,725
Boys	Before	45,651	43,140	44,370	40,537	2,032
Boys	After (original)	43,651	42,628	42,717	41,512	-
Boys	After (corrected)	42,501	42,915	42,300	43,289	0,137
Girls	Before	48,438	47,784	47,875	43,476	3,091*
Girls	After (original)	46,375	45,432	46,219	44,548	-
Girls	After (corrected)	45,046	44,600	45,317	46,981	1,319
Afrikaans	Before	47,255	45,849	46,535	42,946	2,336
Afrikaans	After (original)	44,902	44,774	44,535	44,054	-
Afrikaans	After (corrected)	43,748	44,570	43,867	45,812	0,900
English/other	Before	45,783	44,200	43,519	37,158	3,781*
English/other	After (original)	44,913	43,040	42,926	38,474	-
English/other	After (corrected)	43,510	42,426	42,651	41,370	0,410

*Significant on the 5 per cent level

**Significant on the 1 per cent level

3.5 THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR TOWARD AUTHORITY

As in the case of the results of the rating scale discussed in Paragraph 3.4 no significant differences were found between the corrected scores of the four experimental groups (see Table 3.11). It would therefore seem that according to this rating scale, the television diets did not influence the pro-social behaviour of the children toward peers or authority in any way.

3.6 THE PICTURE PROJECTION TEST FOR AGGRESSION (PPT)

No significant differences between the scores of the four experimental groups, both before and after the viewing of programmes, could be ascertained (Table 3.12). The amount of aggression projected by the subjects was therefore apparently not affected by the programmes.

3.7 THE PICTURE SITUATION TEST (PST)

The corrected scores on the PST, as in the case of the PPT mentioned above, did not differ significantly between groups (Table 3.13). This means that the self-reported likelihood of subjects performing an aggressive act in the types of everyday situation depicted in the PST, was not increased or decreased by the various experimental treatments.

3.8 THE SUBJECTS' LIKING OF AND THEIR EMOTIONAL REACTION TO THE PROGRAMMES

After each of the eighteen programmes of every television diet had been shown, the subjects were asked to indicate on a form how much they had liked the programme they had just seen and how it had made them feel, that is to what extent did they feel excited, afraid, bored, annoyed, nervous, angry, sad, happy, upset and "good". In the case of the subjects' liking of the programmes the possible answers were "Liked it very much", "Did not really like it", and "Did not like it at all". These alternatives were scored by awarding them weights of 1, 2 and 3 respectively. The answers to the other questions receiving similar scores of 1, 2 and 3 were "Not at all", "A little" and "Very". In addition, "Do not know" responses weighted with scores of 2 each could be made in all cases. For each question the average score of every subject who had four or less "Do not know" or blank (not present) responses was computed. The mean scores of the various groups and subdivisions of subjects involved, are given in Tables 3.14 to 3.18. Guilford's (1972) two-tailed \bar{z} -test was again used to compare these mean scores. As no programmes were shown to the control group, this group is naturally not mentioned in these tables.

In Table 3.14 the results of all three groups of subjects as a whole are presented. From the significant \bar{z} -values in the table it can be deduced that subjects in the pro-social group liked the programmes less than those in the other two experimental groups. This is borne out further by the finding that the audience of the pro-social programmes reported that they felt less excited, more bored, more annoyed, more sad and less "good" than the members of the aggressive and neutral groups. It also appears that the aggressive diet caused children to be more afraid and nervous than the subjects who had received the pro-social or neutral treatments. Subjects in the neutral group, besides feeling less bored and more "good" than the pro-social group, also reported feeling less afraid, nervous, angry, sad and upset than either of the other two groups.

The reported reactions of the various subdivisions of pupils (boys, girls, Afrikaans, English/other) appear in Tables 3.15 to 3.18. Relatively few significant \bar{z} -values were found among the English/other subjects, while the number of significant differences found among the boys and girls were approximately equal.

Generally speaking, the four subdivisions yielded the same type of reaction to the programmes as those reported for all the subjects as a whole. This means that for each subdivision there is some evidence supporting the broad finding that children who had watched the pro-social programmes reacted in a more negative manner than the other subjects, that is they tended to like the programmes less and to be less excited and more bored, annoyed and saddened by the pro-social programmes. Subjects in the aggressive group were also generally more nervous and afraid than the other subjects, while in most cases the neutral group was less afraid, nervous, sad or upset than any other group.

No contradictory findings were found between any of the subdivisions or between the subdivision and the subjects as a whole. In other words, every comparison of groups that yielded a significant difference for a certain subdivision of subjects, always yielded a corresponding difference in the same direction for the other subdivisions. These corresponding differences, except perhaps in the case of the English/other subjects, usually also reached the required level of significance. Therefore, the picture that emerges with regard to the reactions to the programmes, is a fairly consistent one.

TABLE 3.11

MEAN SCORES OF SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR
TOWARD AUTHORITY

Group		Scores				F-values
		Mean scores of groups				
Subjects	Testing phase	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
All	Before	44,041	43,088	44,090	39,899	2,984*
All	After (original)	41,905	41,044	41,881	40,443	-
All	After (corrected)	40,913	40,752	40,853	42,494	0,914
Boys	Before	42,619	41,952	44,361	38,341	2,566
Boys	After (original)	41,476	38,929	41,222	39,068	-
Boys	After (corrected)	40,853	38,750	39,439	41,293	0,836
Girls	Before	45,906	44,923	43,933	41,857	1,041
Girls	After (original)	42,469	44,462	42,633	42,171	-
Girls	After (corrected)	40,949	43,754	42,742	43,994	1,698
Afrikaans	Before	44,830	44,805	46,033	41,434	1,750
Afrikaans	After (original)	42,787	43,512	43,400	42,226	-
Afrikaans	After (corrected)	42,197	42,940	41,974	43,998	0,626
English/other	Before	42,577	39,739	41,000	33,611	3,712*
English/other	After (original)	40,577	37,087	38,903	33,889	-
English/other	After (corrected)	48,613	37,105	38,040	38,188	0,177

*Significant on the 5 per cent level

TABLE 3.12

MEAN SCORES OF SUBJECTS ON THE PICTURE PROJECTION TEST FOR AGGRESSION (PPT)

Group		Scores				F-values
		Mean scores of groups				
Subjects	Testing phase	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
All	Before	15,925	14,871	15,600	15,261	2,278
All	After (original)	15,500	14,613	15,112	14,507	-
All	After (corrected)	15,178	14,958	14,995	14,605	0,532
Boys	Before	16,250	14,793	15,345	15,316	2,124
Boys	After (original)	15,675	15,149	15,103	14,924	-
Boys	After (corrected)	15,116	15,561	15,147	14,987	0,320
Girls	Before	15,600	14,961	15,904	15,190	0,879
Girls	After (original)	15,325	14,000	15,123	13,984	-
Girls	After (corrected)	15,217	14,277	14,833	14,123	1,202
Afrikaans	Before	15,989	14,755	15,330	15,280	1,894
Afrikaans	After (original)	15,548	14,286	15,102	14,354	-
Afrikaans	After (corrected)	15,129	14,654	15,103	14,387	0,774
English/other	Before	15,836	15,044	15,931	15,233	0,759
English/other	After (original)	15,433	15,108	15,125	14,717	-
English/other	After (corrected)	15,240	15,413	14,873	14,904	0,254

TABLE 3.13
MEAN SCORES OF SUBJECTS ON THE PICTURE SITUATION TEST (PST)

Groups		Scores				F-values
		Mean scores of groups				
Subjects	Testing phase	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
All	Before	10,497	10,366	11,887	10,363	1,651
All	After (original)	12,116	12,213	12,444	10,664	-
All	After (corrected)	12,350	12,558	11,536	11,012	2,582
Boys	Before	12,280	10,920	14,270	12,518	3,066*
Boys	After (original)	13,813	12,511	14,404	12,747	-
Boys	After (corrected)	13,996	13,779	13,000	12,741	1,026
Girls	Before	8,905	9,724	8,901	7,524	1,300
Girls	After (original)	10,595	11,868	9,986	7,921	-
Girls	After (corrected)	10,523	11,104	9,918	9,016	1,599
Afrikaans	Before	10,237	11,122	10,944	9,427	0,091
Afrikaans	After (original)	12,194	12,959	11,270	10,085	-
Afrikaans	After (corrected)	12,392	12,396	10,860	10,979	1,998
English/other	Before	10,864	9,242	13,229	11,563	4,191**
English/other	After (original)	12,000	11,106	14,086	11,406	-
English/other	After (corrected)	12,292	9,594	12,599	11,172	1,067

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABLE 3.14

DIFFERENCES IN THE SUBJECTS' EMOTIONAL REACTION TO AND LIKING OF THE TELEVISION PROGRAMMES: ALL SUBJECTS

Reaction	Mean scores of groups			Differences between means: \bar{z} -values		
	Aggressive treatment	Pro-social treatment	Neutral treatment	Aggressive pro-social treatment	Aggressive -Neutral treatment	Pro-social -Neutral treatment
Programme liking	21,954	23,928	21,737	-4,407**	0,517	5,080**
Excited	41,814	37,459	41,241	4,669**	0,569	-4,042**
Afraid	24,985	22,025	20,221	4,728**	7,726**	5,534**
Bored	21,758	24,577	22,466	-6,097**	-1,518	4,225**
Annoyed	21,508	22,723	20,800	-2,439*	1,516	3,768**
Nervous	24,984	21,800	20,537	5,359**	7,750**	3,536**
Angry	21,581	21,019	20,197	1,329	3,163**	2,399*
Sad	22,308	23,619	20,344	-2,647**	4,035**	7,498**
Happy	40,548	39,987	41,827	0,562	-1,180	-1,848
Upset	22,205	22,288	20,786	-0,183	2,976**	3,507**
Good	47,579	44,879	46,694	3,678**	1,137	2,373*

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABLE 3.15

DIFFERENCES IN THE BOYS' EMOTIONAL REACTION TO AND LIKING OF THE TELEVISION PROGRAMMES

Reaction	Mean scores of groups			Differences between means: \bar{z} -values		
	Aggressive treatment	Pro-social treatment	Neutral treatment	Aggressive pro-social treatment	Aggressive -Neutral treatment	Pro-social -Neutral treatment
Programme liking	21,954	24,266	21,896	-3,421**	0,090	3,747**
Excited	41,531	37,892	40,766	2,588**	0,496	-5,508**
Afraid	22,125	21,729	19,795	0,565	3,521**	4,624**
Bored	22,015	24,819	22,534	-3,887**	-0,715	3,106**
Annoyed	21,629	23,373	21,183	-2,243*	0,580	2,794**
Nervous	23,540	21,646	20,257	2,522*	4,502**	3,187**
Angry	21,143	21,146	20,315	-0,005	1,474	1,767
Sad	20,734	22,795	20,097	-3,825**	1,172	5,030**
Happy	41,651	39,887	41,533	1,287	0,078	-1,224
Upset	21,460	22,476	20,861	-1,612	0,966	2,810**
Good	47,339	44,364	46,632	2,924**	0,635	-2,318*

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABLE 3.16
DIFFERENCES IN THE GIRLS' EMOTIONAL REACTION TO AND LIKING OF THE TELEVISION PROGRAMMES

Reaction	Mean scores of groups			Differences between means: \bar{z} -values		
	Aggressive treatment	Pro-social treatment	Neutral treatment	Aggressive pro-social treatment	Aggressive -Neutral treatment	Pro-social -Neutral treatment
Programme liking	21,954	23,597	21,533	-2,802**	0,815	3,636**
Excited	42,092	36,863	41,850	4,237**	0,189	-3,727**
Afraid	27,758	22,361	20,759	6,953**	7,616**	3,157**
Bored	21,500	24,347	22,379	-4,954**	-1,535	3,043**
Annoyed	21,391	21,986	20,339	-0,974	2,145*	2,783**
Nervous	26,385	21,972	20,883	4,936**	6,433**	1,712
Angry	22,000	20,873	20,051	1,775	2,930**	1,635
Sad	23,833	24,620	20,644	-1,010	4,178**	5,716**
Happy	39,444	40,000	42,207	-0,388	-1,799	-1,494
Upset	22,938	22,086	20,695	1,343	3,094**	3,620**
Good	47,813	45,408	46,776	2,239*	0,945	-1,144

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABLE 3.17
DIFFERENCES IN THE AFRIKAANS SUBJECTS' EMOTIONAL REACTION TO AND LIKING OF THE TELEVISION PROGRAMMES

Reaction	Mean scores of groups			Differences between means: \bar{z} -values		
	Aggressive treatment	Pro-social treatment	Neutral treatment	Aggressive pro-social treatment	Aggressive -Neutral treatment	Pro-social -Neutral treatment
Programme liking	21,859	24,620	21,571	-4,534**	0,520	4,930**
Excited	40,512	36,358	41,557	3,297**	-0,757	-4,151**
Afraid	25,329	21,959	20,328	4,307**	6,346**	3,754**
Bored	21,709	25,156	22,000	-5,697**	-0,474	4,731**
Annoyed	21,630	23,615	20,776	-2,851**	1,266	3,677**
Nervous	25,241	21,663	20,721	4,754**	6,111**	1,790
Angry	22,036	21,200	20,294	1,407	2,756**	1,761
Sad	22,400	23,021	20,493	-1,013	2,716**	4,022**
Happy	40,561	39,065	42,522	1,151	-1,379	-3,299**
Upset	22,500	22,232	20,970	0,432	2,456*	2,187*
Good	47,951	44,565	47,118	3,648**	0,774	-2,438*

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABLE 3.18

DIFFERENCES IN THE ENGLISH/OTHER SUBJECTS' EMOTIONAL REACTION TO AND LIKING OF THE TELEVISION PROGRAMMES

Reaction	Mean scores of groups			Difference between means: \bar{z} -values		
	Aggressive treatment	Pro-social treatment	Neutral treatment	Aggressive pro-social treatment	Aggressive -Neutral treatment	Pro-social -Neutral treatment
Programme liking	22,195	22,836	21,898	-0,956	0,415	1,608
Excited	44,317	39,035	41,763	4,246**	1,882	-1,904
Afraid	24,317	22,196	20,232	1,893	3,773**	3,559**
Bored	21,951	23,727	23,089	-1,035	-1,458	0,804
Annoyed	21,171	21,315	20,745	-0,220	0,607	1,017
Nervous	24,610	22,127	20,431	2,413*	4,223**	2,272*
Angry	20,634	20,778	20,125	-0,276	0,920	1,467
Sad	22,000	24,927	20,286	3,444**	2,388*	7,109**
Happy	40,375	41,357	42,018	-0,604	-0,935	-0,446
Upset	21,610	22,509	20,714	-1,400	1,170	2,700**
Good	46,825	45,038	46,729	1,404	0,083	-1,435

*Significant on the 5 per cent level

**Significant on the 1 per cent level

CHAPTER 4

RESULTS OF THE EXPERIMENTS IN THE CAPE PROVINCE

4.1 INTRODUCTION

All the data pertaining to the Behaviour Rating Scale, the Picture Projection Test (PPT) and the Picture Situation Test (PST) were analysed with the same statistical procedures described in Chapter three. The additional observations on pre-school children's behaviour while watching the programmes and during play periods afterwards were analysed by means of t-tests.

4.2 RESULTS FOR NURSERY SCHOOL SUBJECTS

4.2.1 Results with regard to the Behaviour Rating Scale, the PPT and the PST

According to the Behaviour Rating Scale filled in by parents (Tables 4.1 to 4.5) the children who had seen the aggressive programmes were judged as showing more pro-social behaviour towards authority than any of the other groups.

The Behaviour Rating Scale (as filled in by teachers), the Picture Projection Test and the Picture Situation Test failed to show any significant differences among the groups on the corrected "after" scores. These results are given in Tables 4.6 to 4.11.

TABLE 4.1

MEAN SCORES OF NURSERY SCHOOL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD PEERS: PARENTS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	35,714	29,556	32,714	33,000	1,025
After (original)	31,429	32,333	35,000	33,429	-
After (corrected)	30,034	33,638	34,921	33,224	1,211

TABLE 4.2

MEAN SCORES OF NURSERY SCHOOL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION
TOWARD AUTHORITY: PARENTS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	27,429	24,250	28,500	25,400	1,169
After (original)	25,857	24,750	29,875	28,200	-
After (corrected)	25,128	26,423	28,337	29,004	2,203

TABLE 4.3

MEAN SCORES OF NURSERY SCHOOL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL
BEHAVIOUR TOWARDS PEERS': PARENTS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	51,000	43,333	46,500	47,000	0,259
After (original)	52,500	42,000	44,500	45,333	-
After (corrected)	47,819	45,602	44,680	44,973	0,978

TABLE 4.4

MEAN SCORES OF NURSERY SCHOOL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL
BEHAVIOUR TOWARD AUTHORITY: PARENTS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	48,750	43,250	49,333	47,333	0,580
After (original)	52,000	42,000	47,667	47,167	-
After (corrected)	51,023	45,909	46,268	47,216	5,540**

**Significant on the 1 per cent level

TABLE 4.5

DIFFERENCES IN MEAN CORRECTED SCORES OF NURSERY SCHOOL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR TOWARD AUTHORITY: PARENTS' RATINGS

Experimental treatment		Differences in scores (treatments X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F _s -values
Aggressive	Pro-social	5,114	3,283*	7,185*
Aggressive	Neutral	4,755	3,344*	7,763*
Aggressive	Control	3,807	2,672*	4,977*
Pro-social	Neutral	-0,359	-0,253	0,044
Pro-social	Control	-1,307	-0,919	0,587
Neutral	Control	-0,948	-0,745	0,370

*Significant on the 5 per cent level

TABLE 4.6

MEAN SCORES OF NURSERY SCHOOL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD PEERS: TEACHERS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	32,211	31,500	29,278	29,125	0,308
After (original)	32,895	31,938	30,667	27,875	-
After (corrected)	31,525	31,236	32,055	29,407	0,651

TABLE 4.7

MEAN SCORES OF NURSERY SCHOOL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD AUTHORITY: TEACHERS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	23,762	24,818	23,048	23,917	0,089
After (original)	26,714	26,318	24,476	24,333	-
After (corrected)	26,852	25,359	25,356	24,310	1,206

TABLE 4.8

MEAN SCORES OF NURSERY SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR TOWARD PEERS: TEACHERS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	48,200	44,600	52,000	-	0,847
After (original)	41,800	42,000	46,000	-	-
After (corrected)	41,507	43,782	43,517	-	0,095

TABLE 4.9

MEAN SCORES OF NURSERY SCHOOL SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR TOWARD AUTHORITY: TEACHERS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	40,222	39,833	35,600	35,000	0,516
After (original)	37,444	38,667	37,200	34,333	-
After (corrected)	36,669	38,023	37,987	35,323	0,237

TABLE 4.10

MEAN SCORES OF NURSERY SCHOOL SUBJECTS ON THE PICTURE PROJECTION TEST

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	15,958	14,478	14,409	17,588	1,936
After (original)	16,250	14,739	14,409	17,471	-
After (corrected)	16,005	15,265	14,971	16,377	0,706

TABLE 4.11
MEAN SCORES OF NURSERY SCHOOL SUBJECTS ON THE PICTURE SITUATION TEST

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	14,762	16,739	15,000	16,167	0,541
After (original)	15,571	15,261	15,846	16,000	-
After (corrected)	16,203	14,476	16,302	15,625	1,098

4.2.2 Additional observations of subjects

The rating scales on which observers recorded the children's behaviour both during and immediately after the television sessions, were scored by computing the mean number of observations per session for each child and rounding this score off to the closest whole number. The differences between the mean scores for the different groups were compared by means of t-tests and the results are given in Tables 4.12 to 4.15.

With regard to the play period after viewing the programmes the most important finding was that boys who had viewed the aggressive programmes imitated the behaviour they had just viewed on the programmes much more than boys who had viewed the pro-social or neutral programmes. Boys who had viewed aggressive and neutral programmes shoved other children more while playing than boys who had viewed pro-social programmes. Boys who had viewed the neutral programmes showed more pro-social behaviour in general than boys who had viewed aggressive programmes. These findings did not hold true for girls. Verbally, girls who had viewed the neutral programmes, talked in a nicer way to other children than those who had viewed the pro-social programmes. Children who watched the aggressive programmes also paid more attention while watching than those who watched the pro-social programmes. They also showed more negative emotions (crying or looking scared) and less positive emotions (laughing and smiling) than the children watching either the pro-social or neutral programmes.

TABLE 4.12

ADDITIONAL OBSERVATIONS OF NURSERY SCHOOL SUBJECTS' BEHAVIOUR WHILE WATCHING TELEVISION PROGRAMMES

Kinds of behaviour	Mean scores of groups		
	Aggressive treatment	Pro-social treatment	Neutral treatment
1. Aggression while watching	0,76	0,65	0,71
2. Absence of attention	6,12	8,13	6,63
3. Positive emotion: laugh or smile	0,44	1,57	0,96
4. Negative emotion: cry or look scared	0,12	0,00	0,00
5. Imitation while watching	0,72	1,25	0,29

TABLE 4.13

DIFFERENCES IN MEAN OBSERVATIONS OF NURSERY SCHOOL SUBJECTS' BEHAVIOUR WHILE WATCHING TELEVISION PROGRAMMES

Kinds of behaviour	Experimental treatment		Differences in scores (X-Y)	
	X	Y	Magnitude and direction of difference	t-values
1. Aggression while watching	Aggressive	Pro-social	0,11	0,492
	Aggressive	Neutral	0,05	0,177
	Pro-social	Neutral	-0,06	-0,227
2. Absence of attention	Aggressive	Pro-social	-2,01	-2,119*
	Aggressive	Neutral	-0,51	-0,648
	Pro-social	Neutral	1,50	1,515
3. Positive emotion	Aggressive	Pro-social	-1,13	-4,610**
	Aggressive	Neutral	-0,52	-2,600**
	Pro-social	Neutral	0,61	2,490**
4. Negative emotion	Aggressive	Pro-social	0,12	1,799*
	Aggressive	Neutral	0,12	1,799*
	Pro-social	Neutral	0,00	0,000
5. Imitation	Aggressive	Pro-social	-0,53	-1,676
	Aggressive	Neutral	0,43	2,150*
	Pro-social	Neutral	0,96	3,395**

*Significant on the 5 per cent level

**Significant on the 1 per cent level

Separate analyses were made for boys and girls of the additional observations of behaviour during the play periods after watching television programmes. These results are given in Tables 4.14 and 4.15.

TABLE 4.14

ADDITIONAL OBSERVATIONS OF NURSERY SCHOOL SUBJECTS' BEHAVIOUR DURING PLAY PERIODS AFTER
WATCHING TELEVISION PROGRAMMES

Kinds of behaviour (items)	Sex	Mean scores of groups		
		Aggressive treatment	Pro-social treatment	Neutral treatment
1. Shoves another child	M	3,385	0,769	4,500
	F	2,333	1,200	1,167
2. Hits another child	M	4,385	3,385	9,167
	F	2,833	2,200	2,083
3. Kicks another child	M	1,000	1,462	0,750
	F	0,833	0,100	0,500
4. Pinches or bites another child	M	0,231	0,077	0,583
	F	0,167	0,000	0,000
5. Pulls another child's hair	M	0,615	0,308	0,250
	F	0,583	0,300	0,000
6. Grabs another child's toy	M	3,000	3,769	3,750
	F	2,583	2,200	1,917
7. Fights for a toy	M	3,385	3,154	3,000
	F	1,250	2,600	1,917
8. Talks or shouts aggressively	M	4,000	1,692	6,500
	F	3,917	1,100	1,333
9. Gives toy to another child	M	0,462	1,462	1,583
	F	2,250	2,000	2,000
10. Talks nicely to another child	M	2,308	2,308	4,500
	F	4,250	2,300	6,083
11. Shares something with another child	M	13,846	16,308	16,417
	F	14,333	15,700	16,750
12. Helps another child	M	1,462	2,154	1,417
	F	1,147	1,900	0,917
13. Is sympathetic, consoles	M	0,000	0,154	0,333
	F	0,167	0,500	0,000
14. Asks forgiveness	M	0,077	0,077	0,083
	F	0,083	0,200	0,000
15. Makes peace between others	M	0,000	0,154	0,417
	F	0,167	0,200	0,000
16. Acts patiently	M	0,154	0,231	0,417
	F	0,583	0,700	0,417
17. Imitation of programme	M	16,462	2,000	5,167
	F	6,417	4,000	1,083

TABLE 4.15

DIFFERENCES IN MEAN OBSERVATIONS OF NURSERY SCHOOL SUBJECTS' BEHAVIOUR DURING PLAY
PERIODS AFTER WATCHING TELEVISION PROGRAMMES

Kinds of behaviour (items)	Sex	Experimental treatment		Differences in scores (X-Y)	
		X	Y	Direction of difference	t-values
1. Shoves another child	M	Aggressive	Pro-social	+	3,310**
		Aggressive	Neutral	-	0,893
		Pro-social	Neutral	-	3,633**
	F	Aggressive	Pro-social	+	0,805
		Aggressive	Neutral	+	0,929
		Pro-social	Neutral	+	0,045
2. Hits another child	M	Aggressive	Pro-social	+	0,766
		Aggressive	Neutral	-	1,937
		Pro-social	Neutral	-	2,251*
	F	Aggressive	Pro-social	+	0,591
		Aggressive	Neutral	+	0,772
		Pro-social	Neutral	+	0,118
3. Kicks another child	M	Aggressive	Pro-social	-	0,898
		Aggressive	Neutral	+	0,386
		Pro-social	Neutral	-	0,903
	F	Aggressive	Pro-social	+	1,689
		Aggressive	Neutral	+	0,650
		Pro-social	Neutral	-	1,048
4. Pinches or bites another child	M	Aggressive	Pro-social	+	1,069
		Aggressive	Neutral	-	0,963
		Pro-social	Neutral	-	1,436
	F	Aggressive	Pro-social	+	0,909
		Aggressive	Neutral	+	1,000
		Pro-social	Neutral		0,000
5. Pulls another child's hair	M	Aggressive	Pro-social	+	1,589
		Aggressive	Neutral	+	1,301
		Pro-social	Neutral	+	0,208
	F	Aggressive	Pro-social	+	0,986
		Aggressive	Neutral	+	2,548*
		Pro-social	Neutral	+	2,162*
6. Grabs another child's toy	M	Aggressive	Pro-social	-	0,848
		Aggressive	Neutral	-	0,580
		Pro-social	Neutral	-	0,013
	F	Aggressive	Pro-social	+	0,335
		Aggressive	Neutral	+	0,559
		Pro-social	Neutral	+	0,279

TABLE 4.15 (CONTINUED)

Kinds of behaviour (items)	Sex	Experimental treatment		Differences in scores (X-Y)	
		X	Y	Direction of difference	t-values
7. Fights for a toy	M	Aggressive	Pro-social	+	0,303
		Aggressive	Neutral	+	0,483
		Pro-social	Neutral	+	0,185
	F	Aggressive	Pro-social	-	1,551
		Aggressive	Neutral	-	1,013
		Pro-social	Neutral	+	0,665
8. Talks or shouts aggressively	M	Aggressive	Pro-social	+	2,690*
		Aggressive	Neutral	-	1,066
		Pro-social	Neutral	-	2,165*
	F	Aggressive	Pro-social	+	1,759
		Aggressive	Neutral	+	1,762
		Pro-social	Neutral	-	0,448
9. Gives toy to another child	M	Aggressive	Pro-social	-	2,341*
		Aggressive	Neutral	-	2,533*
		Pro-social	Neutral	-	0,215
	F	Aggressive	Pro-social	+	0,384
		Aggressive	Neutral	+	0,348
		Pro-social	Neutral		0,000
10. Talks nicely to another child	M	Aggressive	Pro-social		0,000
		Aggressive	Neutral	-	2,507*
		Pro-social	Neutral	-	2,462*
	F	Aggressive	Pro-social	+	2,622*
		Aggressive	Neutral	-	1,980
		Pro-social	Neutral	-	4,097**
11. Shares something with another child	M	Aggressive	Pro-social	-	1,521
		Aggressive	Neutral	-	1,438
		Pro-social	Neutral	-	0,061
	F	Aggressive	Pro-social	-	0,589
		Aggressive	Neutral	-	1,112
		Pro-social	Neutral	-	0,462
12. Helps another child	M	Aggressive	Pro-social	-	1,126
		Aggressive	Neutral	+	0,083
		Pro-social	Neutral	+	1,195
	F	Aggressive	Pro-social	-	0,821
		Aggressive	Neutral	+	1,177
		Pro-social	Neutral	+	1,947

TABLE 4.15 (CONTINUED)

Kinds of behaviour (items)	Sex	Experimental treatment		Differences in scores (X-Y)	
		X	Y	Direction of difference	t-values
13. Is sympathetic, consoles	M	Aggressive	Pro-social	-	1,000
		Aggressive	Neutral	-	1,849
		Pro-social	Neutral	-	0,744
	F	Aggressive	Pro-social	-	0,998
		Aggressive	Neutral	+	1,000
		Pro-social	Neutral	+	1,791
14. Asks forgiveness	M	Aggressive	Pro-social	-	0,000
		Aggressive	Neutral	-	0,057
		Pro-social	Neutral	-	0,057
	F	Aggressive	Pro-social	-	0,573
		Aggressive	Neutral	+	1,000
		Pro-social	Neutral	+	1,101
15. Makes peace between others	M	Aggressive	Pro-social	-	1,000
		Aggressive	Neutral	-	1,292
		Pro-social	Neutral	-	0,730
	F	Aggressive	Pro-social	-	0,193
		Aggressive	Neutral	+	1,483
		Pro-social	Neutral	+	1,651
16. Acts patiently	M	Aggressive	Pro-social	-	0,480
		Aggressive	Neutral	-	1,225
		Pro-social	Neutral	-	0,829
	F	Aggressive	Pro-social	-	0,266
		Aggressive	Neutral	+	0,557
		Pro-social	Neutral	+	0,579
17. Imitation of programme ^ø	M	Aggressive	Pro-social	+	6,617**
		Aggressive	Neutral	+	4,214**
		Pro-social	Neutral	-	1,687
	F	Aggressive	Pro-social	+	0,715
		Aggressive	Neutral	+	1,756
		Pro-social	Neutral	+	2,585*

*Significant on the 5 per cent level

**Significant on the 1 per cent level

^øSince the largest differences between the groups were found on item 17 (Imitation of programme), more detailed analysis showed that boys viewing aggressive programmes imitated the programmes more the longer they were watching these programmes. Over the first five days the mean imitation score was much lower (5,200) than over the last five days (19,600). This difference is significant on the 5 per cent level ($t = -2,312$).

4.2.3 Summary of significant findings for nursery school subjects

a. The Behaviour Rating Scale

According to the Behaviour Rating Scale filled in by parents the children who had seen the aggressive programmes were judged as showing more pro-social behaviour towards authority figures than any of the other groups (pro-social, neutral or control).

b. Additional Observations

1. According to the additional observations by objective observers the children watching the pro-social programmes paid less attention while watching the programmes than children watching the aggressive programmes.
2. According to these observations the children watching the pro-social and neutral programmes showed more positive emotions (laughing and smiling) than those watching the aggressive programmes and the pro-social group showed more positive emotions than the neutral group.
3. These observations also showed that the children watching the aggressive programmes showed more negative emotions (crying or looking scared) than children watching either the pro-social or neutral programmes.
4. Children watching the aggressive and pro-social programmes imitated the programmes more while watching them than children watching neutral programmes.
5. Since sex differences have been found concerning the effects of television programmes on young children, separate analyses were made of the behaviour of the two sexes after watching the programmes. The main finding was that boys who had watched aggressive programmes imitated the programmes much more than boys who had watched the pro-social or neutral programmes.
6. Boys who had watched the pro-social programmes shoved other children less during play than boys who had watched the aggressive or neutral programmes.
7. Boys who had seen the neutral programmes hit other children more during play than boys who had seen the pro-social programmes.
8. Boys who had seen the pro-social programmes talked less in an aggressive way to other children than boys who had seen the aggressive and neutral programmes.

9. Boys who had seen the pro-social or neutral programmes were more inclined to give a toy to another child during play than boys who had seen the aggressive programmes.
10. Boys who had seen the neutral programmes were more inclined to talk nicely to other children than boys who had seen the aggressive or pro-social programmes.
11. The findings for girls were not as clear as those for boys. Girls who had seen the neutral and aggressive programmes talked in a nicer way to other children than girls who had seen the pro-social programmes.
12. Girls who had viewed the neutral programmes were less inclined to pull another child's hair than girls who had viewed the aggressive or pro-social programmes.
13. Girls who had seen the pro-social programmes imitated the programmes more during the play period than girls who had seen the neutral programmes.

4.3 RESULTS FOR STANDARD ONE SUBJECTS

The same analysis done for the nursery school with regard to the Behaviour Rating Scale, the Picture Projection Test and the Picture Situation Test was repeated here, and the results are given in Tables 4.16 to 4.27. Except for the teachers' ratings on the Behaviour Rating Scale, there were no significant differences between the four groups. Teachers rated all three television groups as more aggressive than the control group. Those who had viewed the pro-social programmes and those in the control group were rated as more pro-social toward peers than those children who had viewed the neutral programmes.

TABLE 4.16
MEAN SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION
TOWARD PEERS: PARENTS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	29,000	32,286	29,250	32,000	0,622
After (original)	28,750	31,857	27,500	32,250	-
After (corrected)	29,548	30,610	28,142	31,181	0,761

TABLE 4.17

MEAN SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION
TOWARD AUTHORITY: PARENTS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	25,167	26,091	24,846	23,000	1,380
After (original)	25,917	27,000	24,538	23,909	-
After (corrected)	25,736	26,378	24,501	24,762	0,476

TABLE 4.18

MEAN SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL
BEHAVIOUR TOWARD PEERS: PARENTS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	52,000	46,667	47,375	45,667	0,956
After (original)	44,750	45,167	44,375	46,000	-
After (corrected)	41,274	46,115	44,736	47,778	0,356

TABLE 4.19

MEAN SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL
BEHAVIOUR TOWARD AUTHORITY: PARENTS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	46,667	40,500	47,429	45,200	1,778
After (original)	42,778	45,375	43,000	46,800	-
After (corrected)	42,093	47,076	42,021	46,683	0,873

TABLE 4.20

MEAN SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION
TOWARD PEERS: TEACHERS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	23,824	24,105	22,313	25,294	0,496
After (original)	24,412	24,211	22,938	21,706	-
After (corrected)	24,478	24,070	24,115	20,690	3,467*

*Significant on the 5 per cent level

TABLE 4.21

DIFFERENCES IN MEAN CORRECTED SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE
MEASURING AGGRESSION TOWARD PEERS: TEACHERS' RATINGS

Experimental treatment		Differences in scores (treatments X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F_s -values
Aggressive	Pro-social	0,408	0,314	0,066
Aggressive	Neutral	0,363	0,266	0,047
Aggressive	Control	3,788	2,824**	5,315**
Pro-social	Neutral	-0,045	-0,034	0,001
Pro-social	Control	3,380	2,589*	4,481
Neutral	Control	3,425	2,515*	4,222*

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABLE 4.22

MEAN SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION
TOWARD AUTHORITY: TEACHERS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	21,722	22,200	21,421	22,550	0,344
After (original)	21,500	22,200	21,789	21,750	-
After (corrected)	21,663	22,069	22,136	21,404	0,307

TABLE 4.23

MEAN SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR TOWARD PEERS: TEACHERS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	41,714	46,167	40,455	36,692	3,414*
After (original)	33,143	40,667	28,091	34,462	-
After (corrected)	32,867	38,338	28,396	36,502	6,789**

*Significant on the 5 per cent level

**Significant on the 1 per cent level

TABLE 4.24

DIFFERENCES IN MEAN CORRECTED SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR TOWARD PEERS: TEACHERS' RATINGS

Experimental treatment		Differences in scores (treatments X-Y)		
X	Y	Magnitude and direction of difference	\bar{z} -values	F _s -values
Aggressive	Pro-social	-5,471	-2,040	2,982
Aggressive	Neutral	4,471	1,640	1,887
Aggressive	Control	-3,635	-1,375	1,385
Pro-social	Neutral	9,942	4,225**	10,885**
Pro-social	Control	1,836	0,814	0,442
Neutral	Control	-8,106	-3,510**	8,269**

**Significant on the 1 per cent level

TABLE 4.25

MEAN SCORES OF STANDARD 1 SUBJECTS ON THE BEHAVIOUR RATING SCALE MEASURING PRO-SOCIAL BEHAVIOUR TOWARD AUTHORITY: TEACHERS' RATINGS

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	35,500	37,700	34,643	30,841	1,769
After (original)	31,125	33,300	28,643	31,462	-
After (corrected)	30,386	31,112	28,469	33,788	1,204

TABLE 4.26

MEAN SCORES OF THE STANDARD 1 SUBJECTS ON THE PICTURE PROJECTION TEST

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	14,611	14,167	15,045	13,526	0,348
After (original)	13,889	15,500	14,000	15,316	-
After (corrected)	13,766	15,606	13,632	15,911	0,918

TABLE 4.27

MEAN SCORES OF STANDARD 1 SUBJECTS ON THE PICTURE SITUATION TEST

Testing phase	Mean scores of groups				F-values
	Aggressive treatment	Pro-social treatment	Neutral treatment	Control treatment	
Before	15,682	11,632	13,913	18,130	5,006**
After (original)	14,727	12,263	12,304	17,087	-
After (corrected)	14,085	15,312	13,274	14,213	0,414

**Significant on the 1 per cent level

CHAPTER 5

SYNOPSIS AND CONCLUSIONS

This study was conducted before the introduction of television in South Africa. Thus an opportunity existed to test the effects of different television diets on television-naïve subjects. Most research on the effects of television has been done after television has already permeated the particular society. It is virtually impossible in a television-saturated society to untangle developmental factors and previous exposure to television from the effects of television test material used in experiments. For example, in the United States it was found that younger children react differently from older children to television violence. This could be due to developmental changes or it could be that early television inputs sensitise or desensitise children to later television programmes.

The Surgeon General's Scientific Advisory Committee of the United States pointed out that there is a serious neglect of research about possible pro-social learning through television as well as the long-term effects of standard television programmes on the personality development of children.

Recently, a few studies (see Chapter One) have been addressed to this problem. However, they all suffer from the fact that they were conducted in television-permeated societies. The results obtained thus far are therefore inconclusive.

The objective of this study was to compare the impact of different types of programming. The relative effects of exposure to aggressive, pro-social and neutral programmes were investigated. In order to facilitate a direct comparison between the effects of the various kinds of programmes, pre-exposure baseline data with a variety of measures were obtained. The study can be described as a field experiment employing a test-retest (with control group) type of design.

South Africa was one of the last industrialised Western societies with a well-developed communication network (mass media such as radio, newspapers, bioscopes and books) to introduce television. The urban White child in South Africa lives in an environment in many ways similar to that of children in other industrialised societies. The findings of this study may contribute to an understanding of the importance of socialisation in mediating the effect of television programming on the aggressive and pro-social behaviour of children.

The design of the field experiment allowed for the testing of the effects of a number of variables:

- a. The relative impact of different types of programming (aggressive, pro-social and neutral) on different age groups over a period of four weeks could be investigated. Subjects ranged in age from 10 to 12 years (Standards 3 to 5) in the Transvaal

(N = 695) to 7-8 years (Standard 1, N = 105) and 5-6 years (nursery school, N = 95) in the Cape Province.

- b. The effects on sex and language groups for subjects in the age group 11 to 13 years could be studied.

Different measuring instruments were used to study the relative effects of the different types of programmes. These instruments were selected to measure indications of children's actual aggressive and pro-social behaviour towards peers and authority (Behaviour rating scales), as well as projected aggression (Picture Projection Test) and attitude towards aggression (Picture Situation Test).

The results obtained emphasise that a single simplified explanation may be inadequate to explain the effects of television. A number of variables such as whether aggressiveness is measured toward peers or authority, interest aroused by the programme and prior socialisation modify the effect of programmes so that simple statements such as: "Aggressive television content increases aggressive behaviour" cannot be made.

Following is a broad summary of the results:

5.1 THE PICTURE PROJECTION TEST AND PICTURE SITUATION TEST

In none of the various subject groups (sex, age or language groups) were any statistically significant differences obtained with either the Picture Projection Test or the Picture Situation Test. This lack of significant differences between the experimental groups indicates that according to these measuring instruments viewing either pro-social, aggressive or neutral programmes has no effect on subsequent attitude towards aggression. This finding is in line with that of Howitt (1972) who suggested that the child is unlikely to adopt the media message as part of his value system since he has much more relevant experience on which to base his value system. This may especially be true of television-naïve subjects since television is not yet experienced as a socialisation force. It may well be that with prolonged exposure, the significance, as well as the effects of television, will increase. Such an increase in significance as socialisation agent is likely when television is regarded, owing to an increase in the broadcasting of actuality programmes such as news, as being an established mass medium and not just a novel form of entertainment.

5.2 THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD PEERS

On this rating scale, as applied to pupils in Standards 3 to 5, subjects who had seen the neutral programmes tended to be lower in post-viewing aggressiveness than any of the other television groups or the control group. Contrary to the

other groups, a reduction in aggressiveness occurred for the neutral group as a whole. Whereas this finding was also significant for boys and Afrikaans subjects there was practically no difference for girls between the different groups in these standards. It should be emphasised that the differences obtained were actually owing to a reduction of aggressiveness after viewing neutral programmes. Comparison of the television groups with the control group indicates no significant differences between the aggressive and pro-social groups. These results seem to be inconsistent with the Berkowitz arousal theory. A possible explanation for the reduction of aggressiveness in the neutral group in terms of the arousal theory is that certain television content such as humour may actually lower the excitatory potential.

For Standard One subjects (7-8 year olds) significant differences in peer aggressiveness were obtained between the television groups and the control group, but these differences were due to a reduction in aggressiveness of the control group and not to any post-viewing differences in aggressiveness of the television groups.

No significant differences in peer aggressiveness were found for pre-school children on the behaviour rating scale.

5.3 THE BEHAVIOUR RATING SCALE MEASURING AGGRESSION TOWARD AUTHORITY

The only significant results obtained with this measuring instrument, applied to subjects in Standards 3 to 5. Compared to the aggressive, control and neutral groups, there was a significant increase in aggressiveness following the viewing of pro-social programmes. This finding is contrary to expectations and probably reflects dissatisfaction with having to view less-liked pro-social programmes. It might be that children in the aggressive and neutral groups indulged in less aggressiveness as a kind of reciprocal behaviour for being allowed to watch well-liked programmes, or there may be some truth in the theory that watching aggressive behaviour being punished, leads to inhibition of aggressiveness, especially toward authority.

5.4 THE BEHAVIOUR RATING SCALES MEASURING PRO-SOCIAL BEHAVIOUR

No significant differences existed between the different experimental conditions with regard to pro-social behaviour for any of the age or sex groups, the only exceptions being standard One subjects, behaviour toward peers and nursery school subjects' behaviour toward authority. In the case of the Standard One pupils, after the programmes had been viewed, teachers rated the pro-social and the control groups as displaying significantly more pro-social behaviour than the neutral group. Here it should be kept in mind, however, that all groups showed

a decrease in pro-social behaviour on the final testing session. Nursery school subjects in the aggressive group, as rated by parents, displayed more pro-social behaviour after viewing the programmes than any other group. It should be noted that the pre-school subjects were mainly Afrikaans-speaking and that the screening of the programmes for comprehensibility was done with Standard Three to Five (10 to 12 year olds) subjects in mind. It might well be that pre-school children found the plot of pro-social and neutral programmes incomprehensible. Observations done during the viewing of the programmes indicate inattention for the pro-social programmes (relying on a plot) and imitation for aggressive programmes where following the action is not so much a function of comprehension.

5.5 SELF REPORTED EMOTIONAL REACTIONS OF SUBJECTS (STANDARDS 3 TO 5) TO THE PROGRAMMES

Subjects' self-reports of their emotional experience while watching the various kinds of television programmes, suggest that aggressiveness might have been over-emphasised in previous studies as detrimental effect at the cost of other undesirable effects such as anxiety.

Significant differences between the various treatment groups indicate that a significant effect of aggressive content may be fear and anxiety. Regardless of sex or language group, the finding for subjects in Standards 3 to 5 is that children who watched the pro-social programmes liked the programmes less, were less excited, more annoyed and more bored than the other groups. Subjects in the aggressive group were also generally more nervous and afraid than the other groups while the neutral group was less afraid, nervous or upset than any other group.

5.6 ADDITIONAL OBSERVATIONS OF PRE-SCHOOL CHILDREN'S BEHAVIOUR

Emotional behaviour of pre-school children while watching television is consistent with the emotional reaction to the different kinds of programmes reported by subjects in Standards 3 to 5. Children watching the pro-social and neutral programmes showed more positive emotions such as laughing than children watching aggressive programmes. Children watching the aggressive programmes displayed more negative emotions such as crying and looking scared than children watching either the pro-social or neutral programmes.

With regard to observations of pre-school children's behaviour during play periods after watching television programmes it should be pointed out that no pre-viewing measures were obtained and no control group was included in the experimental design. The results of these observations should therefore be moderated because of these limitations. This does not apply to imitation, where the pre-post-test type of design is not appropriate. There is evidence however,

that female subjects who watched the pro-social programmes talked more nicely to other children than those who watched either the aggressive or neutral programmes. The largest difference between groups was found with respect to imitation of aggressive programmes by boys. This finding is consistent with the remark that the programmes might have been beyond the comprehension of the preschoolers with the exception of aggressive programmes which lend themselves to imitation in such a situation.

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