



SCIENTIFIC KNOWLEDGE ABOUT TELEVISION VIOLENCE

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No single study ever proved a hypothesis conclusively. It is the weight of evidence accumulated from various sources that persuades us of the validity of a supposition. (Selltiz et al., 1977)

INTRODUCTION

Defining the phenomenon of television violence is not an easy task. While the existence of violent programs is obvious to everyone, it is difficult to determine the exact nature of the violence that is represented and its effects upon individuals and social groups.

In the fifteen years since the CRTC's Symposium on Television Violence, research findings have continued to accumulate which contradict, supplement and invalidate previous studies. The profusion of scientific articles, conferences, government and other reports, and the recommendations of various committees is in sharp contrast with the lack of a consensus about the results.

The controversy centres on the definition of television violence and the theories surrounding it, particularly their political and scientific incidences. Three constraints, or "grey areas", with respect to research into television violence have fueled the debate:

- methodological problems associated with the instruments used in measuring violence

- different interpretations of the results, centring on the nature and intensity of the link between television violence and aggressive or antisocial behaviour (is it associative, correlative, causal or is there no connection?) and the significance of the connection (if, in fact, television violence has negative consequences, are they short- or long-term and what is the impact on the individual and on society?)

- the process or factors that explain the effects of symbolic violence: instinctive/ genetic/ physiological/ cognitive/ emotional/ individual.

This report examines the status of scientific knowledge about television violence by taking into account each of these constraints. The findings have been grouped as (1) research about the perceptions, uses and gratifications associated with television violence and (2) research about aggressiveness and violent behaviour.

SECTION I — RESEARCH ON THE PERCEPTIONS, USES AND GRATIFICATIONS OF TELEVISION VIOLENCE

A. THE CULTIVATION PARADIGM

1. Content Analyses

Research into the depiction of violence on television and its impact on the perceptions and actions of individuals originated in the United States. It was fuelled by media sociology (Sidney Head, 1954; Dallas Smythe, 1954; Melvin De Fleur, 1964) and the realities of commercial broadcasting (In commercial broadcasting, advertising is made credible by utilising the findings of social psychology). The initial approach was based on the Laswellian chain: who said what, to whom, by what means, and with what effect?

Content analyses, which concentrate on quantitative measurements of various parameters, study symbolic violence as a social script that provides a wealth of lessons — in other words, that offers and promotes certain roles or models through socially typical characters. Hypotheses in this type of research are usually formulated as a series of empirically observable categories or themes.

The most extensive long-term research to date on the impact of television violence on viewers was carried out by a team of communication researchers at the University of Pennsylvania, under George Gerbner (Gerbner and Gross, 1974, 1976, 1980; Gerbner, Gross, Morgan and Signorielli, 1980; Signorielli, 1986; Morgan, 1989). Originally sponsored by the National Commission on the Causes and Prevention of Violence (the Eisenhower Commission, 1967), the research has continued under the sponsorship of the Surgeon General's Scientific Advisory Committee (Cornstock et al., 1972) and numerous other organisations such as the White House Office of Telecommunications Policy and the American Medical Association. The Gerbner study also provided data for the 1982 *Pearl et al.* report, which synthesised ten years of research on the subject, as well as the 1989 *UNESCO* report

1.1 Violence Index

In his work, Gerbner defines violence as the act of injuring or killing someone or the threat of injuring or killing someone, whatever the method or context. This research (1967-1990) has been carried out in two closely related phases. The first

phase involves the development of a systematic basis of empirical data. Each year, episodes of television drama (including cartoons) that are broadcast by the three major U.S. networks in a typical week of regularly-scheduled programming — during prime time (7:30 to 11:10 p.m.) on weekdays, and from 8:00 a.m. to 2:30 p.m. on weekends — are taped and then viewed and coded to obtain a violence index. The index evaluates the prevalence of programs that contain violent acts; the frequency of such acts per program and per hour, and the number of characters involved in violent acts either as victims or aggressors.

The following equation is used to calculate the index:

where: $\text{Violence index} = \%p + 2(R/P) + 2(R/H) + \%V + \%k$

$\%p$ = percentage of programs that contain violence

R/P = number (or percentage) of violent episodes per program

R/H = number (or percentage) of violent episodes per hour

$\%V$ = percentage of characters associated with violent acts (aggressors and victims)

$\%k$ = percentage of characters associated with murders (murderers and victims)

Since the study began, the highest value recorded by the violence index for dramas was in the year 1984/85, when nearly eight violent episodes per hour were recorded (the average is six episodes per hour over 19 years of observation). During the same period, children's programs provided 27 violent acts per hour, while the 19-year average was 21 violent incidents per hour (Gerbner, 1989, p. 17). The International Coalition Against Violent Entertainment (ICAWE) recently calculated that cartoons produced in the U.S. contain on the average 41 violent acts per hour (Government of Quebec, 1989).

Despite these numerical variations, the depiction of violence has remained remarkably stable in terms of themes, characters and plot. (Gerbner, 1989, p. 18).

1.2 Cultural Indicators and tendencies

Using the violence index as a basis, the second phase of Gerbner's research explores the way in which different social groups perceive or accept television violence. In the absence of direct access to the perceptions of television viewers, Gerbner and his colleagues embarked on a systematic study of traits observed in individuals who are exposed to large amounts of television violence.

The Cultivation Effect

The cultivation effect can be defined roughly as follows: television content conveys a truncated version of reality that is likely to reinforce or alter the existing balance of power in society. Like a distorting mirror, television violence cultivates a feeling of strength or vulnerability based primarily upon the social hierarchy that is depicted. In this way, televised violence inhibits social change by stressing that societal relations are based on conflict. Television shows the viewer who can do what to whom in order to obtain something.

If you are a woman, [...] if you are non-white, if you are not native-born, if you are very young or very old — or any combination of these — your risk goes up. The number of victims in a category, divided by the number of violent incidents in each group, gives you a risk ratio. You end up reproducing the actual power hierarchy of American society. (Gerbner, 1976, p. 98)

From a macrosociological point of view, television violence serves as an instrument of the ruling classes and institutions.

Whatever else it may have to offer, this scenario provides its producers with the sense and reality of power and its persistence may be understood, among other things, in terms of its utility for those who define and control its uses. (Gerbner, 1989, p. 27)

Some of the themes found in the literature on the reinforcement of the status quo by television include: the overrepresentation of male characters in relation to female characters and the concomitant recourse to lethal force to enforce law and order (Taylor and Dozier, 1983; Boemer, 1984); distortion of the causes and effects of crime in society (Dominick, 1978; Haney and Manzolatti, 1980); polarization of the relations between whites and blacks; the impression that acts of physical violence are committed by strangers; and a frequency of armed robberies and homicides that is completely disproportionate to the actual occurrence of these types of crimes (Schloss and Giesbretch, 1972; Greenberg, 1980). This reinforcement of power, according to Comstock (1989), borders on the schizophrenic:

Television is schizophrenic in its treatment of law enforcement. Police and private detectives solve crimes with a success rate matched in actual practice only by the ticketing of parking violators by meter maids. The sociologist Otto Larsen many years ago found that

antisocial means frequently were employed in television drama to attain socially-approved goals. That often remains the case. On television, justice and law are not synonymous and the end quite often appears to justify the means (Comstock, 1989, p. 175).

The legitimization of established power is not exclusive to television drama. News programs also play a major sociopolitical role:

The ability of the media to define the situation in the long run, and the symbiotic relation between the media and the authorities, make it possible for those in power to turn the terrorist 'rhetoric' to their own advantage. (Gerbner, 1989, p. 20)

According to one study on how journalists depict crime and law enforcement (Knight and Dean, 1982), the media structures events selectively, transforming social facts into a cleverly orchestrated "sensationalist choreography". Thus, during the siege and liberation of the Iranian embassy in London, the Canadian press legitimized the violence employed by the British Special Forces, by emphasizing their "efficiency". In so doing, Knight and Dean maintain that:

the media have, to some extent, assumed the functions of moral and political — in short, ideological — reproduction performed previously (and limitedly) by the visibility of the public event itself. (cited in Gerbner, 1989, p. 4)

Further, in an analysis of the strategies used by U.S. television network journalists, Wurth-Hough (1983) observes that the process of selecting and defining terrorist events reflects the media's ideological biases.

Reviewing several studies of the treatment of political violence in the media (Milburn et al., 1987; Palet, Fozzard and Ayanian, 1982; Larson, 1986; DeBoer, 1979; Palmerton, 1983; Elliot, 1987 and many others), Gerbner concludes that:

Typically isolated from their historical and social context, denied description of conditions or cause, and portrayed as unpredictable and irrational, if not insane, those labelled terrorists symbolize a menace that rational, humane, and democratic means cannot reach or control. (Gerbner, 1989, p. 26)

And, television viewers are unaware of the "social control" that the media are exercising. In fact, according to Signorielli (1986):

The program mix is such that the average viewer has little opportunity to exercise any kind of choice in viewing. Large audiences watch violent programs scheduled in time periods when large audiences watch television. (Gerbner, 1989, p. 22)

As early as 1978, Comstock and his colleagues observed that the presence of violence in a program bears a particular relation to its popularity. Caron (1976) verified this finding in his study of Quebec's televised serial dramas (teleromans), which contain little violence. These programs attract huge audiences, and seem to provide a more realistic, if incomplete, depiction of Quebec society than the crime shows and situation comedies imported from the United States

Diener and Defour (1987) go farther, stating that there is no correlation between Nielsen ratings and the amount of violence in a show and moreover, suggest that a program's popularity is more a matter of scheduling. A recent study on television viewers (Williams, 1989) demonstrates that the public show a preference for programs that do not contain violent scenes. These findings contradict the widely-held hypothesis that violence and sexual exploitation contribute to a show's popularity.

The effects of television violence in Canada have been analyzed by the Royal Commission on Violence in the Communications Industry (1976). Assessing a wide range of television programs — films, drama, children's programming, news, sports, etc. — as well as the content of other mass media, the Commission noted the complexity of the phenomenon (long- and short-term effects that mutually reinforce one another and that depend in many cases on the personal use of the media) and supported Gerbner's thesis:

A more subtle possibility is that positive short-term effects, such as entertainment, excitement and relaxation, may distract us from important long-term effects, especially of cumulative kinds such as desensitization, defensiveness or negative norm acquisition. (Lamarsh Commission, 1976, Vol. 1, p. 26)

To support the cultivation hypothesis, Gerbner and his colleagues measured the correlation between exposure to television drama (an independent or "predictive" variable) and the effect of victimization, which was defined as an exaggerated perception of

living in a world full of danger and risk and the consequent search for greater social control in order to assuage one's anxiety and fear.

Gerbner and his colleagues argued that the information about society conveyed by television content is radically different from the real world. The influence of either of these sources on an individual's interpretation of reality is a function of the amount of television programming viewed. In response to critics, who maintain that it is impossible to know which came first, the chicken or the egg, Gerbner jests:

Television is at the centre of the new cultural hatchery [...]. The key question is not what 'causes' most violence and crime, as that goes far beyond media. It is: what contribution does constant exposure to certain scenarios of violence and terror make to different groups' conceptions of their own risks and vulnerabilities, to a society's approach to conflict, to the distribution of power, and the likelihood of its abuse. (Gerbner, 1990, pp. 14, 15)

Through telephone and live interviews, Gerbner and his colleagues asked a representative sample of the U.S. adult population (18 years and older) to indicate, in their opinion, which coefficients, among a proposed list, corresponded to the closest statistical approximation of violence-related social phenomena. "Victimization" scores were awarded using a "mean world index", a scale measuring two dimensions of the victimization syndrome:

Pessimism, measured by cognitive estimates of the social crime rate:

In society, the risk of

- (a) a woman and (b) a man being attacked when walking alone at night;
- the actual percentage of police and other law-enforcement officers; and
- the percentage of women likely to be raped during their lifetime

Fearfulness, measured by emotive responses to:

- the risk of being attacked during a given week (the choices offered ranged between 50% [the risk

coefficient as conveyed by television] and 1% [the actual statistical coefficient]);

- the safety of the neighbourhood at night; how dangerous the neighbourhood was perceived to be; and
- the fear of performing certain actions such as going out alone at night or walking in a park late at night.

The researchers used these scores to demonstrate that the sense of victimization does not occur as the result of a direct process (for example, through manipulation by the media) but, rather, through the interaction of two subtle and cumulative processes: "mainstreaming" and "resonance".

Mainstreaming refers to the process by which perceptions and interpretations of societal violence come to conform to the depictions of violence on television. Repeated exposure to violence in television dramas tends to create an audience that is passive, anxious, lacking in individuality, and sharing a "paranoid" conception of life based on fear, suspicion and mistrust.

Resonance is the congruence of the reality depicted on television with social reality. A typical example is the double dose of convergent messages received by heavy television viewers who also live in violent neighbourhoods. This phenomenon is also observed among persons in certain social categories (particularly women, ethnic minorities, the economically disadvantaged and senior citizens), who tend to exaggerate the risk of being attacked, particularly when certain aspects of their social environment (racism, sexism, physical vulnerability, etc.) "resonate" with the messages conveyed by television. This conception of violence is a concrete expression of one of the most popular theses in empirical sociology — the narcotizing dysfunction or "derealization" of the media (Merton and Lazarsfeld, 1963). This argument has, however, also been criticized.

2. Limitations of Cultural Indicators

The findings of research into cultural indicators have received lukewarm support (Comstock 1982, 1989; Sparks, Ogles, Vavrus and Spirek 1988; Sparks and Ogles, 1989, 1990) or been invalidated (Owen, 1972; Hirsch, 1980, 1981; Doob and Macdonald, 1979; O'Keefe and Reid-Nash, 1987, etc.)

2.1 Instruments of Measurement

Hirsch (1980) observed that the measurements of viewing used by Gerbner (heavy versus light doses of television exposure) provide neither the accuracy nor the precision required to verify the hypothesis that the quantity of television watched is an important predictor of the fear of crime. In a subsequent study (1981), Hirsch expressed doubts about the reliability of Gerbner's findings because of the lack of independent variables (other than television) that should act as controls on the influence of these factors in items of the victimization scores. Using independent variables to verify Gerbner's results, Hirsch found that the correlation between the number of hours spent watching television and the feeling of living in a dangerous world was cancelled out by the weight of sociodemographic variables such as gender, age and occupation.

Owen (1972) argues that the parameters in Gerbner's violence index evaluate violence per se, rather than its effects on television viewers. According to Owen, Gerbner's method is arbitrary and assigns equal value to content that is very different in nature, thus reducing a multidimensional phenomenon to the simple addition of apples and oranges. Violent acts, detached from their social and moral context, are added together (for example, a violent act perpetrated by a brutal, sadistic character has the same value as a violent act in the "Road Runner" cartoon), which serves to inflate or conceal the true nature of television violence.

Gunter (1985) found four major problems in Gerbner's work:

Gerbner's definition of violence is not sufficiently precise. The violence index is tilted towards behaviour and events, rather than the context of violence, assigning the same weight to crime dramas and slapstick comedies. Gunter reminds us that the studies carried out by Greenberg and Gordon (1972) and by Coffin and Tuchman (1973) reveal significant differences between Gerbner's classification of programs as violent and those that would be so attributed by critics and the general public. Although some types of behaviour are unambiguous (murder, physical assault and the deliberate destruction of property are perceived by the majority of viewers as violent acts), verbal and psychological violence as well as slapstick, cartoon and accidental violence are seen differently by different viewers.

Gerbner's sample is not representative of American programming in general. Since it is based on a week's programming, it does not take into account weekly or seasonal variations in the television offering. In addition, important elements of prime-time programming are excluded, particularly news, public affairs, variety and sports.

Like Owen (1972), Gunter criticizes the violence index for being

idiosyncratic and arbitrary, in the way that it combines absolute numbers and percentages.

Lastly, Gerbner's "risk coefficients" are invalid because they are calculated on the basis of the ratio between perpetrators and victims in each sociodemographic category, without taking into account the absolute number or total proportion of victims in each of these categories. Given the predominance of white male characters, Gunter considers that if such an analysis was undertaken, Gerbner's findings would be invalidated.

Other researchers (Miethe and Lee, 1984; Yin, 1980) suggest that traditional measurements of victimization conceal conceptual confusion that may invalidate the results. As Zillman and Wakshlag (1985) explain:

In past research as well as in the cultivation hypothesis itself, perceptions, attitudes, apprehensions, and acute affective and emotional states have been liberally mixed, and perceptions were treated as manifestations and measures of affect, if not acute fear. Perceptions need not be linked to emotions, however, and persons can have bleak views on crime but not fear of becoming a victim. (p. 147)

In the same vein, Ogles, Sparks and Mrozla (1989) state that:

Mass communication researchers interested in the relation between television content and fear of crime might consider the fear measures of Ferraro and LaGrange (1987). These items are preferable to traditional measures of victimization, which typically do not assess fear but instead focus on estimates of personal safety and perceived risk, which are conceptually distinct. (p. 9)

Two experiments illustrate this observation. The first was carried out by Sparks, Ogles, Vavrus and Spirek (1988) on 101 subjects selected at random from two cities (with low and high crime rates) in the Midwest. Although the sample is not representative of the population as a whole, the researchers consider that their findings are valid in view of the fact that the crime rate was 3.2 times greater in one city than in the other.

Through telephone interviews, subjects were asked:

1. to evaluate the average amount of time they spent watching television during weekdays and on weekends;

2. to answer four questions frequently used in similar studies to measure the victimization effect the perceived risk of being attacked; the fear of walking alone at night; the relative safety of the neighbourhood at night; and the perceived dangerousness of the neighbourhood; and
3. to respond to 16 questions identified by Ferraro and LaGrange (1987) as accurate measures of the fear of criminal assault.

Submitting these questions to a factor analysis, Sparks et al. (1988) identified five items that could be used as a scale to measure fear:

4. the fear of being murdered;
5. the fear of being threatened with a knife, stick or firearm;
6. the fear of being beaten up by someone they knew;
7. the fear of being beaten by a stranger, and
8. the fear of strangers prowling near one's house late at night.

The results of this experiment provided empirical support for the hypothesis that there is a conceptual distinction between the fear of crime and the risk or probability of assault. They discovered weak correlations between the 16 items in the scale constructed by Ferraro and LaGrange and the four "traditional" items for gauging fear. Further, different patterns of victimization were found. In fact, none of the coefficients based on traditional measurements of fear were significantly linked to television viewing. They did observe, however, a significant, if modest, correlation between television viewing and four of the five items in the test of perceived fear.

A year later, a study by Ogles, Sparks and Mrozla (1989) served to refine the analysis:

It certainly could be argued that the lack of correlations between the responses to the 16 specific crime measures and the traditional cultivation indicators was simply a function of the mismatch between the level of specificity of the measures. (p. 10)

This new study measures the fear of attack against the perceived probability of an attack, for the same sixteen categories of criminal offences. Statistical controls were carried out using independent variables comprising of age, gender, the number of times the respondent had already been attacked, order of the respondent's answers to questions about fear and the probability of being attacked, and the city in which the respondent lived.

The Ogles, Sparks and Mrozla study defines the fear of crime as "a negative emotional reaction that is induced by crime or thoughts about crime. The forerunner of this negative emotion is the subjective cognitive appraisal that one's own sense of well-being is threatened." (Ogles, Sparks and Mrozla, 1989, p. 5)

As in the previous study, the results strongly suggest that fear of an attack and the perceived probability of an attack are measures of two distinct realities. Here, too, measurements of the time spent watching television led to conclusions about victimization that differed from conclusions that were based on measurements of the number of violent scenes watched. Moreover, the data gathered contradict the thesis advanced by Doob and Macdonald (1979) that victimization is a function of neighbourhood crime rate. Eight of the nine positive correlations between television viewing time and the feeling of fear established by Ogles, Sparks and Mrozla, (1989) were found in the city with the least crime. In addition, there was no correlation between the amount of viewing time and any of the 16 items used to measure the perceived probability of attack. Lastly, the principal finding of this study was that television may only promote the fear of certain crimes. The victimization hypothesis could be verified for only 4 of the 16 criminal offences: (a) to be assaulted with a knife, stick or firearm; (b) to be sold contaminated food; (c) to be the victim of a break-in while you are at home; and (d) to be beaten by someone you know.

Given the prevalence of these crimes on television, both in the news and in fictional programs, it seems reasonable that these might emerge as specific fears that are cultivated by general heavy viewing or by heavy viewing of violence. (p. 21)

However, these results were not nearly enough to convince Cumberbatch and Howitt (1989):

Whatever the role of the mass media in our lives, it has become an important focus for research and has exposed a variety of methodological weaknesses in our research tools. Most importantly, the research endeavours to indicate that the conceptual limitations provide a major barrier to understanding the media and cause a major rift between researchers and practitioners. Debate about the effects of television violence inevitably draw in other concerns about rising crime, broadcasting freedom, the vulnerability of children, parental rights, media obligations and professional standards on television and other sundry issues. It is perhaps not surprising that the question of whether television violence

influences violence in real life remains inherently controversial. At the end of the day the research evidence needs to be assessed in terms of what potential policy recommendations are inherent in the various data. Arguably these are insufficiently robust to allow a firm conclusion about television as studied." (Cumberbatch and Howitt, 1989, p. 51)

2.2 Interpretations of the Relation Between Cause and Effect

In addition to the concerns expressed about the accuracy and validity of the measures used by Gerbner and his colleagues, their work also raises questions about the possible degree to which generalization can be made about cultural indicators. For example, Comstock (1982, 1989) observed that the theory of victimization relied on the existence of a simple concomitant variation (X and Y varying together) to infer that repeated exposure to television violence (X) has an influence on the "mean world" syndrome (Y).

Covariance, the stumbling block of research on television violence, indicates that while there are some links among the variables under study, this does not constitute conclusive proof of a causal relation. (American Broadcasting Corporation, 1983; British Broadcasting Corporation, 1987) There are other plausible influences that could have an effect on the exaggerated perception of danger.

In Canada, Doob and Macdonald (1979) suggested that the two terms in the presumed causal relation (the viewing of violence and the subsequent tendency to perceive oneself as a victim) were, in fact, dependent on a third variable: the crime rate in the respondent's neighbourhood. Their study, which was conducted in Toronto, found that variations in the crime rate are attributable to both the frequency of exposure to television and the degree of mistrust expressed by the individuals. The respondents included the residents of high and low crime inner city areas (where the ratio of crimes committed was 614 to 8) and high and low crime suburban areas (where the ratio was 195 to 6). Their results are often cited, but they, too, have recently been called into question (see Sparks, Ogles and Mrozla, 1989).

A British version of Gerbner's study (Wober, 1978) revealed neither a positive nor negative correlation between exposure to television and the "paranoia" index. In Germany, Bowman (1984) confirmed the absence of a link, while Groebel (1982) inverted the temporal order of the causal relation. In contrast to Gerbner's findings, Groebel's path analysis of causality indicated that the

more an individual displays a high degree of insecurity (cause), the greater his or her tendency to watch television (effect).

In the United States, Hughes (1980) carried out a nation-wide survey to test the influence of television on the levels of pessimism and fear shown by television viewers. The results revealed a positive and statistically significant association between television viewing and three of the four items used to measure the respondents' level of pessimism. However, Hughes found a negative link between the fear of becoming the victim of an attack and television viewing, with a significantly higher level of fear among light television viewers.

Other researchers (Wober and Gunter, 1985) have discovered a positive correlation between television viewing and the seriousness of the dangers to which viewers believe they are exposed (exaggerated fears of floods, terrorist acts or being struck by lightning). However, the authors interpret the results as evidence of "selective exposure," rather than of the victimization effect, thus reversing the so called cause and effect relation. For example, individuals who are afraid of lightning or floods tend to prefer watching soap operas. It is highly unlikely that the viewing of soap operas would increase this type of anxiety since such catastrophes are rarely depicted.

O'Keefe and Reid-Nash (1987) also explore the issue of victimization. Their analysis reveals no relation between the viewing of violent dramas and the fear of crime. However, it does establish a relation between exposure to television news and viewers' vulnerability:

Taken as a whole, the findings offer evidence that individuals who pay greater attention to televised news about crime are more fearful of crime and are more concerned about protecting themselves from being victimized. Furthermore, it appears more likely that attention to televised crime news leads to increased fear and concern, rather than the already more fearful and concerned become more attentive... (p. 158)

Lastly, another survey conducted by Weaver and Wakshlag (1986) compares victimization scores according to whether respondents' experience of crime is direct, indirect or through the media. The results of the survey show that only the experience of being a victim contributes to shaping pessimistic views or creating anxiety among television viewers. Further, the survey invalidates Gerbner's resonance theory, since the victimization scores of individuals

whose relatives or friends had been the victims of aggression were not found to be abnormally high.

B. USES AND GRATIFICATION PARADIGM

Uses and gratifications research attempts to put aside the issue of manipulatory effects by postulating that television viewers derive specific gratifications from the content of the programs they watch. Instead of studying the negative effects of violent content, this research focuses on how individuals use television. Herta Herzog's 1944 survey, the purpose of which was to compile an inventory of the functions performed by a particular category of messages, was a first step in this direction. This study offered empirical evidence that viewers who preferred escapist media content, tended to use it as a model for social behaviour. Among a sample of 2,500 people who listened regularly to radio soap operas, 41% stated that they found the shows helpful in solving their daily problems. These respondents tended to be mainly women and were also the least-educated and the most anxious.

A study undertaken by Matilda Riley and John W. Riley (1951) suggested that introverted children, who tend to be isolated from their playmates, are fond of imaginary tales featuring aggression and escape. In comparison with extroverted children, they are more inclined to enjoy programs with a great deal of action and violence. The feeling of being socially or culturally isolated seems to create a desire to escape, which the media readily satisfy.

In *Personal Influence*, Katz and Lazarsfeld (1955) noted that women who had a limited reference group (few social contacts) and showed visible signs of anxiety were the most "faithful" listeners to radio soap operas. Such programs seem to be a way of compensating for the frustrations such listeners likely suffer.

In 1962, however, Katz and Foulkes argued against the functionalist use of the notion of escapism, introducing in its place the idea that the same content generates a wide range of consequences:

To emphasize that media content is "escapist" when it is used for vicariousness and make-believe is to avoid serious consideration of the function of fantasy and ignore other probable uses of this very same content. (p. 383)

Katz and Foulkes propose the hypothesis of social participation, in which individuals use the media not as an escape from their daily lives, but rather, to better adapt to them. As Balle (1980) explains, "the effects of media exposure appear in the form of alternatives, which depend both on the program content and the conditions in which the program is viewed." (p. 586, translation)

Recent studies that focus on motives for using media (McQuail, 1972; Katz, Gurevitch and Haas, 1973; Frank and Greenberg, 1980), have centred on the psychological issue of selective perceptions and the sociolinguistic issue of the semantic construction of televised messages.

1. Studies on Selective Perception

Partisans of the thesis of selective perception include Robinson (1981), Gunter and Furnham (1983, 1984), Snow (1974) and many others. In brief, these researchers maintain that

the act of identifying with a character may make the action appear to be more violent;

other factors, of a personal nature, also affect individuals' perceptions of violence (particular traits, the dramatic nature of the setting, even the country where the film was produced); and

the depiction of violence in a playful context helps to diffuse the feeling of anxiety associated with violence, particularly among children.

Some researchers (Rubin, 1981) imply that television viewers react favourably to most programs, regardless of how much violence they contain. Others (Slater and Elliot, 1980, 1982; Reeves, 1978) argue that television viewers are more influenced by scenes that they find credible. Among adolescents, the fact of perceiving crime shows as realistic (rather than the quantity of television viewed) appears to be correlated with how readily they accept the depiction of violence, as well as their understanding of how law and order is maintained and their conception of public safety. These results suggest that individual values and beliefs are mediated on the basis of the kinds of information that are gleaned from television. Hawkins, Pingree and Adler (1980) and Greenberg (1982), however, argue that the perception of realism has either no effect or an opposite effect.

In observing how viewers of soap operas "construct" their cultural perceptions, Rounder (1984) and Carveth and Alexander (1985) demonstrated that viewing with little emotional investment attached, or ritual viewing (as a part of daily life), contributes more than instrumental motivations (such as identification with the characters) to the reinforcement of the status quo and existing social relations. It is therefore possible, concludes the Rounder study, that active rather than ritual participation mitigates the influence of television:

Cultivation differences among adults, who are similar in cognitive processing abilities, may depend on whether they in fact process television messages actively, not merely whether they are capable of doing so. (cited in Ogles, 1987, p. 45)

This analysis has been contradicted, however, by Perse (1986), who considers that cultural perceptions are "cultivated" by the instrumental viewing of soap operas.

Van der Voort (1986) expresses some reservations about Gerbner's observations on tendencies:

In essence, the cultivation theory is a kind of hypodermic needle theory: without the intervention of any intervening variable, the viewer is presumed to be symbolically contaminated by watching a lot of television. (p. 90)

In her view, if adult viewers are to base their perceptions of crime in society on the symbolic universe portrayed in television dramas, the dramas must first be judged credible. Given the cognitive skills of adults, particularly their ability to distinguish fact from fiction, Van der Voort challenges the thesis that "symbolic contamination" produces any kind of alienation. For although certain violent scenes may create an illusion of reality in the minds of viewers, this does not imbue them with the power of authority. Generally, adults are informed about crime in society from the information available from a wide range of sources such as newspapers, television news, oral communications, etc. In addition, viewers have their own experiences of the phenomenon.

Although convinced that the authenticity or realism of a program depends only in part on its objective characteristics, Van der Voort recognizes the necessity of devoting more study to the analysis of the perceptions children may have about how dangerous the world is.

While adults' pessimism or fearfulness probably is unaffected by watching a lot of dramatized TV violence, it is easier to imagine that children's perceptions are. Children have less access to alternative sources of information, and they may deem some TV drama to be very realistic. (Van der Voort, 1986, p. 90)

Van der Voort studied the perceptions of 314 children from the Netherlands aged 9 to 12, who belonged to different socioeconomic backgrounds. Three major conclusions emerged from the research.

1.1 Degree of Perceived Realism

The study, which exposed respondents to predetermined amounts of programming, revealed that children's perceptions of reality vary according to the type of program watched. While fantasy programs (cartoons, westerns and spy dramas) were clearly perceived as such by the children interviewed, realistic programs (police dramas, adventure series featuring children as heroes and

detective shows) were seen as being very credible by many of the children. When children do not understand the basis of the plot, the violent action they observe cannot be integrated in an imagined narrative, which therefore may lead to anxiety. Of course, the author emphasizes, television does not automatically affect all children and personal factors play a role in the build-up of fear.

1.2 Personal and Sociodemographic Factors

Van der Voort's close examination (1986) of a number of personal and sociodemographic factors likely to affect children's modes of perception, resulted in the following observations:

Children's emotional investment is largely determined by the amount of pleasure they derive from watching television. Children seek out programs that are exciting and fun. It should be emphasized that, in the eyes of children, the programs that most often meet these criteria are those within the realistic category.

Gender does not appear to have an influence on perceptions of violence. However, boys appear to be more inclined to watch violent programs and they are also more likely to respond favourably to violent actions.

As children grow older, particularly between the third and sixth grades, they gradually abandon children's programming for adult shows. Also, older children watch television until later at night (until 9:00 p.m. on weekdays and 10:00 p.m. on weekends, on the average), which also increases their exposure to television violence.

Paradoxically, the perception of violence decreases significantly with age. What is more, not only is violence acceptable, older children actually seem to get pleasure from viewing violent acts. This being said, changes linked to the psychomotor development of children do not seem to have an effect on their moral assessment of violence.

Children from underprivileged backgrounds show a greater tendency to engage in television watching, no matter what shows are broadcast, than children from privileged backgrounds— "low SES (social-economic status) children watch more of everything with pleasure. (p. 217)

1.3 Identification With Characters

Identification is highly gender-specific, (i.e., boys identify with male characters while girls tend to prefer female characters). However, girls may identify with male protagonists, especially when there are few female starring roles in programs. Another

interesting fact is that boys and girls rarely identify with the "bad" characters.

A multiple regression analysis generated the following identification predictor variables: preference for violent programs:

The more strongly children identified with "good guys", the more likely they were to be fans of violent programs. This contradicts the results of studies reported by Howitt and Cumberbatch (1975), in which "children who identify more strongly are not likely to approve of TV characters "violent behaviour" (Van der Voort, 1986, p. 283);

The child's socioeconomic status and/or scholastic performance: "the lower the child's SES and/or school achievement, the more he or she identifies" (p. 284). This observation also contradicts the results reported by Howitt and Cumberbatch (1976), who found that identification is not a function of social class;

The final significant predictor of identification is the amount of violent programs the child watches: the more violent programs the child watches, the more likely he or she is to identify with the characters.

2. Opinion Polls

A British study (Gunter and Wober, 1988), based on 20 opinion polls conducted on behalf of the Independent Broadcasting Authority, established that the widely held opinion that television has too many violent scenes becomes blurred when people are asked to comment on particular programs. Further, a comparison of the assessments of heavy and light television viewers revealed that:

Although there was a tendency for heavy viewers to endorse positive statements about TV violence more often than did light viewers, the same pattern of responding held with regard to negative attitudes about violence in programs. This may indicate that those who think well of TV violence watch more programs, and they then become more positively disposed towards violent portrayals. Alternatively, it could be that individuals who report watching a lot of television have a tendency to agree with attitude-statements of any kind. (Gunter and Wober, 1988, p.31)

The polls also revealed that, while parents often watch programs such as action-adventure series and British and American crime shows that contain a lot of violence with their children, a few parents (a significant minority) acknowledge the negative effects of the violence. Those who do, express concerns about the effects on children under six.

A content analysis of the depiction of violence in British television carried out by Cumberbatch et al. (1987) reported another paradox:

Violence and concerns about violence have clearly increased in society in the last decade, but this has not been reflected by a proportional increase on television even in the news [...] However, within specific types of dramatic fiction violent acts per hour had increased but the signs are that a marked decrease in potentially violent genres has taken place in the last few years. (p. 41)

Gunter (1985) is one of a group of researchers interested in the physical, emotional and ethical context of the violence seen on television. In an experiment conducted in Great Britain, he evaluated the perceptions of a sample of 73 subjects in relation to five characteristics of violence. Using a normative typology of violent content, which took into account both the characteristics of the viewers and the programs that they were asked to evaluate, the following results were reported:

Framework: The more realistic the storyline, the harsher the assessment about the depiction of violence;

Types of characters: Revealing differences were found between characters in British and American dramas. In American dramas, violence affected viewers more when it was perpetrated by men against women or by criminals, while in British dramas, violence was found to be more staking when it was perpetrated by law-enforcement officers or by women;

Forms of physical violence: The use of a knife or other sharp instrument and the use of a firearm were judged to be the cruellest forms of physical violence among the six types considered. Violence inflicted with bare fists was identified as the least troubling;

Pain inflicted: Scenes containing explicit violence had a stronger effect than those in which the suffering of the victim was not perceived. Curiously, it appears that the death of a character alleviates the impression of violence. This is likely attributable to the often antiseptic character of death on television;

Physical environment: In British dramas, interior scenes containing violence were found to be more disturbing, in contrast to American dramas, in which exterior scenes containing violence were found to be more disturbing.

3. Semantic Constructions

In an attempt to provide new thinking about the media, recent empirical research has focused on decoding the televised messages that are received by viewers, who

are considered to be active participants. In opposition to traditional ideas, which focus on the social influences of television violence, this type of research postulates a psychosociological process by which the user enters into "semantic negotiation" with the television content (Breton and Proulx, 1989, p. 157).

Among the researchers involved in this type of work, Hodge and Tripp (1986) carried out a three-year study on how children decode television shows. Based on semiotic techniques, their analysis attempts to revive the issue of the uses that are made of television:

Much of the concern about the effects of television violence turns out to be more than a little misdirected, because it is based on a misunderstanding of how children are interpreting different aspects of the shows which cause the most concern. It is not that television violence of all kinds is benign for all ages and kind of children. What we argue for is an understanding of how qualities of content, like violence, interact with a sense of reality and with more general social attitudes and relationships. "Violence" is not a simple fact about a television program which acts as an irresistible case of enactment's of violence by viewers. It is part of a complex structure of meanings which are interpreted, mediated and acted on in very different ways. (p. 9)

In its conclusion, the study proposes ten practical applications:

"Children typically have the capacity to be active and powerful decoders of television, and programs watched by them are potentially rich in meaning and culture value, though not all programs and ways of viewing are of equal benefit for all children." (p. 213)

"Children's cognitive and semiotic systems develop at least up till the age of 12, so that they not only prefer different kinds of programs from adults, they also respond differently to programs, and interpret them differently: but from the age of 9 they are capable of their own kind of understanding of most mainstream television." (p. 214)

Children's television typically carries dominant ideological forms, but also a range of oppositional meanings." (p. 215)

"It has long been known that the reality factor—television's perceived relation to the real world—is variable, depending on age, experience and social conditions. Indeed, it is a decisive factor in determining the nature of media responses and media effects. But the ability to make subtle and adequate reality judgements about

television is a major developmental outcome that can only be acquired from a child's exposure to television. (p. 215-216)

"All children need some fantasy programs, such as cartoons for younger children. All children, particularly older ones, also need some programs which touch more closely their reality." (p. 216)

"Media violence is qualitatively different from real violence: it is a natural signifier of conflict and difference, and without representations of conflict, art of the past and present would be seriously impoverished." (p. 217)

"Meanings gained from television are renegotiated and altered in the process of discourse and in that form have social status and effect." (p. 217)

"General ideological forms have an overall determining effect on interpretations of television." (p. 217)

"The family is not simply a site for countering the meanings of television, it is also active in determining what the meanings will be." (p. 218)

"The school is a site where television should be thoroughly understood, and drawn into the curriculum in a variety of positive ways." (p. 218)

In *The Lively Audience*, an Australian study, Patricia Palmer (1986) examined the television preferences and modes of interaction displayed by 468 children aged from 8 to 12.

"The world 'lively' has been chosen to describe children as an audience because it was found that in their own talking and playing about the set, and in their viewing behaviour, children were not passive respondents. Rather, they were engaged in the human task of giving their own lives structure and meaning using whatever was at hand to do so within the bonds of their physical and social development." (Palmer, 1986, p. 139)

Her results concur with those of Van der Voort (1986) in many respects. Despite some variations, attributed to the gender or age of the children, the study indicates that pleasure and action are the principle viewing vectors for this audience. Further, it appears that children tend to mimic the behaviour of their heroes and like to discuss their favourite scenes. However, children say they do not like the violence depicted in television news. The reason they give is that they have difficulty in understanding the narrative style of news programs.

Anthony Smith (1985) considers that research on television violence must explore new alternatives outside the dominant paradigms:

The demand for 'evidence' is more a function of the intensity of the debate than of the potential for increasing certitude. Social science has gotten itself into something of a scrape in the matter of television, especially in the area of violence; none of the various sides of the argument about violence will permit social science to depart the field [...]. As the years pass, social science, weighed down with the sheer accumulation of unconvincing research, is more than ever embroiled in an argument in which it is better equipped to be observer than participant, student of form rather than referee. (p. 6)

Recognizing the complexity of the interactions between viewers and television, Katz (1988) writes:

The research findings to date have not provided clear demonstrations of powerful media effects. So researchers must continue to struggle with the question of how to reconcile the research findings with our gut feeling that there are big effects—still the same question. The only answer seems to be to open the black box once more, to look at processes within the individual and to accept the complexity that common sense and research tell us is there. (Katz, 1988, p. 366)

But we should not deceive ourselves: the theory of media use, like any other approach, cannot pretend to provide an exhaustive explanation of the famous "black box":

"Viewers watch escapist programs because they get something out of them. Or at least this is what a whole series of surveys studying the way in which television viewers use television, qualitatively and quantitatively, seem to indicate. [...] It is odd how sociology provides as an explanation what it normally should explain and confines itself to a posteriori rationalization, justifying everything by the connection between the motivation and the material that provides the compensation. In actual fact, what must be explained is the existence of this motivation and the social function that is both fulfilled and concealed simultaneously through the satisfaction that is provided by the escapist material." (Piemme, 1978, pp. 84, 89, translation)

SECTION II: RESEARCH ON AGGRESSIVENESS AND VIOLENT BEHAVIOUR

Violence and aggressiveness are related terms and are often used interchangeably, although violence generally refers to antisocial behaviour involving the use of force or intimidation, while aggressiveness refers to a fundamental drive of all living beings, which is linked to what some would call destruction and others, self-assertion.

Behavioural scientists have investigated three hypotheses about the relation between television violence and aggressiveness: (a) the stimulation of aggressiveness; (b) the reduction of aggressiveness; and (c) the absence of effects.

A. STIMULATION OF AGGRESSIVENESS

1. Laboratory Experiments

The systematic study of the influence of mass media violence on human behaviour began in the 1950s with the experiments of Seymour Feshbach (1955, 1956), Alberta Siegel (1956) and Eleanor Maccoby et al. (1955, 1956) and continued in the following decade with the work of Bandura, Ross and Ross (1963) and Berkowitz and Rawlings (1963), among others. Using groups of subjects observed under laboratory conditions, these experiments (With the exception of Feshbach's work, which will be discussed later in the text.) attempted to measure the negative effects of exposure to violent material. Although usually short term, the effects may, in certain circumstances, extend for periods of time. The major theories of this type of research are summarized below.

1.1. The stimulation effect refers to the theoretical model that links an individual's physiological state to his or her cognitive state and this cognitive state to previous behaviour. According to this model the simple observation of television violence can result in independent physiological stimulation, activating all the organism's responses, including latent aggressiveness. Changes in the heart rate, blood pressure and respiration rate are indices of the excitation produced by visual stimuli on the cognitive structures that control aggressive reactions (Schacter, 1964).

The standard laboratory experiment involves arousing the subjects' anger or frustration and then exposing some of them to violent content (a film or television program). Some others are exposed to the neutral content. Subsequently, the subjects are given the opportunity to administer electric shocks to other subjects who have attacked them verbally and are supposedly in an adjacent room. [In actual fact, there is no one in the room.] The intensity, duration and frequency of the shocks are used to measure the aggressiveness.

Stimulation by Frustration/Anger

Berkowitz and Rawlings (1963), who conducted pioneering research about stimulation, assert that viewers may confuse stimulation aroused by mass media violence with anger resulting from provocation. This erroneous attribution of excitement states would thus promote aggressive behaviour motivated by anger. Berkowitz and Rawling's experiment attempted to arouse aggressive drives in a sample of college students by deliberately insulting them and then, by projecting clips from the film *Champion* (a movie on boxing in which the hero is badly beaten), in order to create two types of mental predisposition, one justifying aggression and the other implicitly denouncing it. Specifically, the researchers informed half of the subjects that the victim in the film was a "bad guy" and deserved to lose, while they encouraged the other half of the subjects to feel sympathy for the victim. The results show that the depiction of physical punishment, even when it is inflicted on "criminals", may incite certain individuals who are feeling frustrated to undertake against another person what they believe is a justified violent act.

In a series of related experiments, Berkowitz and Geen (1966, 1967) observed that the search for cognitive consistency leads subjects exposed to violent content to identify their emotional stimulation as aggression. Hartman (1969), in an experiment conducted with young delinquents, observed that subjects exposed to a violent film inflicted more intense shocks than those who saw a neutral film, regardless of whether their anger had been aroused previously. Wolf and Baron (1971) compared the aggressive tendencies of a group of college students to those of a group of maximum-security prisoners. All of the subjects exposed to an aggressive film clip inflicted more shocks than did those who saw the non-aggressive version, although overall the prisoners were more inclined to inflict shocks.

A factorial experiment (Liebert and Baron, 1972), which took into account the subjects' gender and age (5 to 6 years or 8 to 9 years), alternately exposed subjects to a violent TV program ("The

Untouchables") and a neutral program. The subjects were then provided with the opportunity of attacking another child (located in an adjacent room) by pushing buttons labelled "hurt" or "help", to either aid or hinder the activity of the "victim". The results showed that exposure to the violent television program led to longer "attacks". This aggressiveness was also reflected during free play.

Stimulation by Aversion

In a more recent study, Berkowitz, Cochran and Embree (1981) proposed that violent material may stimulate aggression in a manner similar to that caused by aversion to certain physical (pain) or psychological stimulation's (the smell of cigarettes or cigarette smoke, disturbing news, excessively high temperatures, etc.). In reacting to aversive stimuli, some individuals display hyperexcitation (i.e., signs of anger, tension, a feeling of not being able to control one's emotions and related physiological changes) that is likely to result in either escape or aggressive behaviour. When there is no possibility of withdrawal, it appears that this state of pronounced excitation promotes an aggressive reaction (Bandura, 1973; Vasta, 1982). On the basis of human and animal behaviour, Berkowitz (1983) observed that "while there is a defensive component to this aggressiveness (i.e., in the attempt to remove the source of unpleasantness), there is also an active inclination to harm available targets." (quoted in Alcock, Carment and Sadava, 1987, p. 283)

Stimulation by Sound

Another study (Geen and O'Neal, 1969) examines how stimulation by sound influences aggressive tendencies. After showing violent and non-violent film clips, the experimenters told subjects that they could evaluate the work performed by a person located in an adjacent room by administering electric shocks. One group of participants was subjected to a noisy environment while they were

administering the shocks, while the other group did so within a normal environment. The results obtained suggest that this type of stimulation aggravates aggressive behaviour in those subjects who had been exposed to the violent film sequence. No difference in behaviour was found, however, in the individuals who had not been stimulated by noise, regardless of the content of the film.

Stimulation by Commercial Message

Worchel, Hardy and Hurley (1976) report that subjects display more signs of verbal hostility when a violent film is interrupted by numerous commercial breaks than is the case with a comedy that has frequent commercial interruptions. The authors attribute this hostility to the frustration caused by the commercials, which act as a catalyst for the aggressive tendencies that are aroused by the violent content.

1.2 This *excitation effect* refers to stimulation caused by media content other than violence. In a study on the impact of erotic films on aggressiveness, Tannenbaum and Zillmann (1975) advance the "two-factors theory". Having observed that the effects reported by Berkowitz were not dependent only on exposure to violent programs, but rather were the result of a state of great excitement associated with erotic communication, they concluded that aggressiveness results from two factors: the potential in media messages for physiological stimulation and the individual's predisposition to commit an aggressive act.

1.3 The effect of *disinhibition or incitation* emphasizes the role that the observation of violence plays in (a) variations in the thresholds beyond which individuals display certain types of behaviour and (b) the identification of signs indicating whether a particular behaviour is appropriate or not. Laboratory research has explored different processes likely to favour the disinhibition of aggressive behaviour, particularly the role of the interpretation of mass-media violence, character identification and perception of the attacker's motivations.

Interpretation

Berkowitz and Alioto (1973) have proposed the hypothesis that the interpretation of observed behaviour influences the intensity of aggressive reactions. To test this hypothesis, they conducted an experiment which consisted of showing a televised football game to a sample of college students. Before viewing the game, some of the subjects were told that they would be watching a "grudge match" (in which each team wanted revenge and was eager to fight the other), while other students were told that they would be seeing a film about a sporting event featuring professional athletes. As expected, the first group administered more electrical shocks than the second group. Studies carried out by Geen and Stonner (1974), Geen and Rakosky (1973) and Geen (1975) support these results and validate the thesis that aggressive behaviour is a function of the indices provided in a given situation.

Identification

Several studies (Leyens and Picus, 1973; Perry and Perry, 1976; Turner and Berkowitz, 1972) attempt to show that identification with the winner of a violent competition increases spectators' levels of aggression. Some researchers (Turner and Goldstein, 1976) see this as a means of facilitating the expression of media-induced aggressiveness, which is all the more efficient because the stimulus is concrete. Others (Geen and Stonner, 1973) maintain that identification with the characters provides highly normative social criteria by which individuals may judge the validity of their propensity to aggression.

Perceptions

The perception of the motives underlying the violence observed also appears to influence aggressiveness. Violence motivated by the desire for vengeance, which most spectators find morally justified (Carpenter and Darley, 1978), appears to be a powerful agent in inciting aggressiveness (Geen and Stonner, 1973, 1974). In fact it appears that aggressiveness disinhibition scores vary in direct relation to the degree of vengeance involved:

the clearer the perception of justified vengeance, the greater the aggressive reactions of angry spectators. However, the search for cognitive consistency does not always lead to an increase in aggressiveness. When television violence contains an experience that is identified as being painful, it may even lead to the inhibition of aggressiveness, as shown in a study (Geen and Stonner, 1972) involving a film about a failed attempt at revenge.

1.4 The desensitization effect is another mechanism that appears to stimulate aggressive drives. Advanced by a number of researchers (Berger, 1962; Lazarus, 1966; Averill et al., 1972; Rabinovitch et al., 1972; Cline et al., 1973; Thomas et al., 1977), this hypothesis claims that repeated exposure to television violence engenders a significant decline in emotional reactions. According to Doob and Climie (1972), a decrease in emotional intensity occurs 20 minutes after exposure. Inspired by the clinical methods used in treating certain phobias, Eysenck and Nias (1978) observed that fictitious violence seen in a comfortable environment such as a movie theatre or at home shares the "therapeutic" elements that are used to achieve desensitization.

Additional research (Donnerstein, 1981; Malamuth, 1981, 1983, 1986a, 1986b; Linz and Penrod, 1984; and Zillmann 1982) has shown that this phenomenon affects adults as well as children. Even women, who traditionally are less inclined to aggression, show a significant decrease in sensitization. Although Lavin and Hanson (1984) were not able to provide physiological measurements for this desensitization, there is a certain consensus that a steady diet of mass media violence leads to emotional saturation.

Since violent stimuli lose their ability to arouse audiences, can it be inferred that there is an emotional and cognitive habituation to acts of violence in general? In the absence of a clear and concise answer to this question, Van der Voort (1986) reminds us that all the hypotheses on the stimulation of aggressiveness posit that such aggression is short-lived:

"There is no doubt that such arousal will decrease in the course of time, so that in fact, explanations for the effect of violent programs hinging on excitation predict that this effect will diminish in the long run. With increasing age of the subjects, however, these hypotheses do not entirely lose their strength. for the plausibility of the arousal hypotheses has

been demonstrated, in particular with young adults." (Van der Voort, 1986, p.66)

1.5 In studying the effect of social learning, researchers have sought to determine whether television violence teaches new acts of aggression that may be imitated, or if it activates behaviour that has already been learned.

Acquisition of New Behaviour

In a famous experiment, Bandura, Ross and Ross (1963a) tested the hypothesis of the acquisition of new behaviour among a hundred pre-school children of both sexes. The subjects were divided into four groups, which participated in different experiments:

The first group witnessed a "live" act of aggression, in which an adult human insulted and struck an inflatable doll in an unusual manner. The person used instruments such as mallets and aggression techniques presumed to be absent from children's normal repertory of violent behaviour.

The second group watched this scene on television;

The third group watched the same scene on television, except that the role of the assailant was played by a cartoon character;

The control group did not participate in any of these situations.

The next test involved the deliberate provocation of the subjects. First, each group of children was taken to a room full of extremely tempting toys. Then, to frustrate the children, they were taken into another, less attractive room, on the pretext that the first room was reserved for other children. The second room contained a few standard toys, as well as the inflatable doll and the instruments used to attack it. Each stage was observed in great detail by the researchers who were hidden behind a one-way mirror. The results showed that the groups exposed to violent models (live, filmed or animated) displayed more new aggressive responses than the control group. Although the filmed version seemed to be a more powerful influence in encouraging imitation than the animated version, the filmed and live versions were found to exert an identical influence. These results have been confirmed in a similar experiment (Hanratty

et al., 1969)

From Learning to Execution

A subsequent experiment (Bandura, 1965) established a significant distinction between the learning and execution of new behaviour. As in earlier experiments, children were shown different versions of a film depicting unusual aggressive acts. In the different versions, the actor was either rewarded or punished, or nothing happened. The results show that exposure to the versions in which the actor was rewarded or nothing happened encouraged imitation, while the version in which the actor was punished led to little or no imitation. Subsequently, the experimenter randomly encouraged subjects actually exhibiting the new aggressive behaviour. This intervention produced a facilitation effect among all the children. Bandura concludes from this experiment that viewing filmed violence is a necessary but not sufficient condition for the learning of aggressiveness.

The actualization of aggression learned from observation depends on the anticipated consequences for both the model and the child (Bandura, 1973, 1975, 1979). If the child perceives violence as something that is both acceptable and accepted, he or she will be more receptive to the incitement to aggression contained in the message. In this case, rewards, either in the form of direct advantages or social recognition, will facilitate subsequent aggressive behaviour. However, if the model's behaviour leads to punishment, the child may internalize the reamed aggressive behaviour, but be afraid to act it out. According to Bandura, Ross and Ross (1963b), this will occur as long as the depiction of the misdeeds does not change the child's value system.

In most televised programs the "bad guy" gains control over important resources and amasses considerable social and material rewards through a series of aggressive manoeuvres, whereas his punishment is generally delayed until just before the last commercial. Thus children have opportunities

to observe many episodes in which antisocially aggressive behaviour has paid off abundantly and, considering that immediate rewards are much more influential than delayed punishment in regulating behaviour, the terminal punishment of the villain may have a relatively weak inhibitory effect on the viewer.

Perhaps, without the fear of punishment, children do not act out observed behaviour until they see a reason for doing so. The social learning theory does not suggest that children automatically reproduce behaviour seen on television. Before imitation occurs, a multitude of factors may hinder the learning process, particularly the child's indifference to the observed model, inability to perceive the suggested behaviour, difficulty in perceiving symbolic representation due to insufficient memory or mental agility, or physical obstacles (for example, flying like Superman or turning into a giant).

Evaluation of Possibilities

In the face of unusual or complex situations, young television viewers probably seek information from external sources, such as their friends or parents, until they have established evaluation criteria allowing them to make an acceptable choice. At this stage, the presence of other individuals and their behaviour towards television may influence the child's imitation of violent acts. According to Eisenber (1980), the company of an adult who approves violent models facilitates the expression of aggressive reactions. However, the presence of a disapproving adult does not moderate children's behaviour. Other research (Leyens, Herman and O'Carrol, O'Neel and Macdonald, 1977; O'Neel and Macdonald, 1977; O'Neel, Macdonald, Cloninger and Levine, 1979) has shown that "contagious" aggressiveness is stronger when the child is surrounded by peers who imitate the observed models.

More recently, Bandura (1986) proposed a new formulation for the acquisition of aggressive

behaviour, substituting the concept of social cognition for that of social learning. While the second concept is applied to the mechanisms by which specific aggressive acts observed in the media are learned and executed, the first concept encompasses the cognitive process of information manipulation. In this sense, Bandura's formulation constitutes an attempt to explain the selective influence of television violence. The audience does not just learn the what, when and wherewithal of aggression, but also produces more or less favourable ideas and thoughts in response to the rules and stratagems observed. "That is viewers incorporate not simply responses but modes of coping from what they observe. This carries viewer psychology a step farther because it extends it to acquiring principles of learning." (Comstock, 1989, p.236)

1.6 The effect of neosemantic associations stipulates that spectators associate violence in films or on television with a wave of aggressive thoughts that have been learned in other contexts and linked to intense emotions such as anger or frustration, that may either arouse or inhibit the immediate aggressive impulses. "The progressive ideas suggested by a violent movie can prime other semantically related thoughts, heightening the chances that the viewers will have other aggressive ideas in this period.. (Berkowitz, 1984, p. 411) A study by Geen and Berkowitz (1966) observes that witnessing a professional boxing match leads to a higher level of aggressiveness among individuals with the same first name as the loser, than among individuals with no such link to the victim.

Spreading Activation

Based on the notion of spreading activation (Collins and Loftus, 1975), the hypothesis of neosemantic associations has revived the debate on stimulation:

"Thoughts of which one is consciously aware send out radiating activation along associative pathways, thereby activating other related thoughts. In this way, ideas about aggression that are not identical to those observed in the media may be elicited later. In addition, thoughts are linked, along the same sort of associative lines, not only to other thoughts but also to emotional reactions and behavioural

tendencies." (Geen and Thomas, 1986, p. 12)

According to Berkowitz (1983, 1984), semantic links are created between television content and spectators' experiences. From these links emerge the behaviour scenarios that are actualized. In this way, television viewers not only react to certain "triggers" (for example, the image of a knife) but, through an independent process of mental association, integrate these triggers with a complex series of behaviours that cannot be accurately predicted owing to their random nature. For example, "if weapons are associated with punished aggression in the person's past, they may inhibit aggression rather than facilitate it. In such a case, the sight of weapons could elicit feelings of apprehension that would interfere with aggression." (Geen and Thomas, 1986, p. 12) In other words, televised stimuli open "mental drawers" which offer patterns of response perceived as appropriate. These in turn lead to a new repertory of stimuli, which provide a source of future associations.

Comstock (1986, 1989) summarizes the main agents that have been found to stimulate aggressiveness in laboratory studies:

Reward or lack of punishment in the portrayal for the perpetrator of violence;

depiction of the portrayed violence as justified;

cues associated with the violence in the portrayal that are likely to be encountered in real life;

portrayal of the perpetrator of violence as similar to the viewer;

depiction of behaviour as intended to inflict harm or injury;

violence portrayed so that its consequences do not stir distaste or arouse inhibitions over such behaviour;

violence portrayed as representing reality as contrasted with concocted fiction;

portrayed violence that is not the subject of critical or disparaging commentary;

portrayals of violence whose commission particularly pleases the viewer;

portrayals, violent or otherwise, that leave the viewer in a state of unresolved excitement;

states of anger, frustration or provocation on the part of viewers.

Together these contingencies form a context for TV's effects and identify four important dimensions: Is the violence rewarded or punished? Is it justified? Is it pertinent to the viewer?, and is the viewer susceptible to it? Whatever heightens these four conditions will increase the likelihood that this experience will help determine future behaviour. (Comstock, 1990, pp. 3940)

In concluding this section, it should be emphasized that the laboratory experiments cited previously are not themselves exempt from criticism. Although these experiments fairly clearly demonstrate the existence of a relation between exposure to violent content and aggressive behaviour, they have often been criticized for being conducted outside the normal social context. This lack of extrinsic validity produces an artificial exposure to violence: the viewing experience is brief and not continuous (if irregular and disrupted) as in the home setting; the experimental experience is itself extraordinary and may elicit atypical responses; the short time span between exposure and measurement, together with the absence of distracting, intervening and possibly counter communicatory stimuli may exaggerate effects; the absence of the possibility of relation removes the most common of factors inhibiting the kind of behaviour under scrutiny.

2. Field Studies

To deal with the difficulties inherent in laboratory experiments, the impact of television violence is increasingly being studied in the field, in its natural environment. Day-care centres, schools, summer camps, and other sites provide a

favourable environment for evaluating "real" aggressive behaviour. However, as Comstock comments, the "comparability of groups and manipulation of experience are not easily achieved outside the laboratory setting. Random assignment is often impossible, and experience may be difficult to control. As a result, the gain in the naturalism of the experiment may be offset by a loss in the confidence with which differences in behaviour can be attributed to the variables being manipulated." (Comstock, 1990, p. 36)

2.1 Correlations studies

These studies, which involve conducting interviews or administering questionnaires among broad samples of children and adolescents, attempt to measure the statistical relation between the observation of television violence and the increased probability of subsequent violent behaviour. Generally, the results have been consistent, pointing to a positive though weak correlation.

A study conducted by McLeod, Atkin and Chaffee (1972) is representative of this type of research. A self-administered questionnaire (subjects write their own answers to the questions on the questionnaire) was given to 600 adolescents, containing a series of statements measuring two dimensions: aggressive attitudes and exposure to television violence. First, subjects were asked to choose their favourite TV programs from a list of 65 programs. Second, they were asked to indicate those aggressive situations which they found acceptable and those they found unacceptable. The questionnaire also included a group of questions allowing researchers to determine the statistical influence of parameters such as the time spent watching TV, socioeconomic status, intelligence and academic performance. The analysis indicated a positive correlation between exposure to violent programs and aggressive attitudes ($r = 0.30$), independent of the control variables.

Another noteworthy example is the questionnaire survey carried out by McIntyre and Teevan (1972) asking 2,300 children and adolescents to list their four favourite television programs. Each respondent also had to answer a series of questions evaluating aggressiveness. A five-point scale, ranging from minor aggressive acts (for example, getting into a fight at school) to serious delinquency involving criminal charges, determined subjects' scores. The results revealed a strong relation between the violent content of preferred programs and recourse to acts of aggression.

In addition, Robinson and Bachman (1972), studying the viewing habits of close to 1,500 young men (19 years old), revealed a positive correlation between preference for violent programs and the degree of aggressiveness, although other variables such as race, previous behaviour and the mother's educational level also had an influence on the data. The researchers concluded that television violence reinforces aggressive tendencies among adolescents who are already so predisposed.

A poll conducted by Dominick and Greenberg (1972), using a sample of 423 fourth- and sixth-grade children, studied the link between exposure to television violence and tacit or actual approval of violence. The more children are exposed to television violence, the more likely they are to perceive violence as an effective way of resolving conflict.

Another survey, quasi-experimental in nature (Parke, Berkowitz, Leyens, West and Sebastian, 1977), showed that consecutive viewing of violent programs for five nights accentuated the aggressive reactions of juvenile delinquents living in an institutional setting. A later test, carried out under laboratory conditions, confirmed that a similar dose of television violence resulted in the same subjects being quicker to strike their companions.

Belson's 1978 survey is undoubtedly the most rigorous of its kind. Financed by CBS and based on a random sample (A random or probability sample is drawn up using a technique that gives each individual not only a known (and not null) probability of being selected, but also an equal probability. This technique, which is based on the laws of probability, provides researchers with a certain degree of reliability during the generalization process (Benoit Gauthier, 1984) of 1,565 London adolescents aged from 12 to 17 years old, the survey, which was carried out in 1972, explores the impact of television viewing habits over more than a decade (1959 to 1972). A wide range of violent behaviour (assault, destruction of property, rape, vandalism, animal abuse, etc.) committed during the previous six months was investigated. The survey was conducted using separate discussion groups with the boys and their parents and individual interviews at home and at the Survey Research Centre, rather than through questionnaires, which were thought to be too impersonal. It allowed 22 hypotheses to be verified on the basis of the following measurements:

exposure to 25 types of violent programs (westerns, horror, science fiction, cartoons, etc.);

the seriousness of the antisocial behaviour;
specific manifestations of violence;
aggressive attitudes, opinions and reactions;
interest in violent phenomena;
insensitivity to violence;
sleep disorders.

An examination of the data lead to the following conclusions:

The evidence gathered through this investigation is very strongly supportive of the hypothesis that high exposure to television violence increases the degree to which boys engage in serious violence. Thus for serious violence by boys:

- (i) heavier viewers of television violence commit a great deal more serious violence than do lighter viewers of television violence who have been closely equated to the heavier viewers in terms of a wide array of empirically derived matching variables;
- (ii) the reverse form of this hypothesis is not supported by the evidence. (Belson, 1978, p. 15)

However, it should be noted that, of all the categories of television violence evaluated, only five had a significant influence on antisocial behaviour, namely: plays or films in which violence occurs in the context of close personal relations; violent programs in which the violence appears to have been "just thrown in for its own sake" or is not necessary to the plot; programs presenting fictional violence of a realistic kind; programs in which the violence is presented as being for a good cause; violent westerns. However, contrary to preconceived ideas, the violence in cartoons like "Tom and Jerry" and in sports and news programs does not appear to affect delinquent behaviour. Moreover, no significant correlation was found between, on the one hand, the viewing of violent programs and, on the other hand, interest in violence, antisocial attitudes such as the rejection of authority or approval of violence as a way to resolve problems, or sleep disorders.

2.2. Panel surveys (or longitudinal studies)

During the last decade, the scientific community has examined the cumulative effects of television violence over extended periods of

time. This work is essential not only to establish the relations between cause and effect but also, and most importantly, to identify the thresholds beyond which the effects occur, as well as the essential determinants, intervening variables, and the processes involved. Panel surveys have paved the way for such research. Since these surveys are repeated over a period of time, this method is extremely useful for understanding the dynamics of change at the individual level. The same individuals are contacted each time, allowing for more reliable long-term results.

The work of Eron, Huesmann, Lefkowitz and Walder (1972, 1984 and 1986) has proven extremely valuable, particularly in its examination in successive stages of the effects of television violence on violent behaviour over a period of 22 years. The first stage of the analysis (1962) included the entire third-grade population of Columbia City, a semi-rural county in New York State. Close to 870 eight-year-old students were evaluated using a psychometric scale of aggression. A peer review and individual interviews with the children and their parents were also carried out. Ten years later (1972), the survey was repeated among 427 subjects of the initial sample, including 211 boys and 216 girls, then adolescents. Later, in 1981, the researchers succeeded in locating 409 of the subjects (198 men and 211 women), who were by then 30 years old. Of this number, 295 individuals were interviewed in person; the 114 others were contacted by telephone or mailed a questionnaire. In addition, 165 wives of the men and 82 of the eldest children in each family agreed to participate in the study. Although children under five were excluded, the child participants (who were on average eight years old) represented more than half of the new generation of the initial sample.

Lastly, supplementary information on infractions of the Criminal Code and of other laws and regulations (including traffic violations), involving 542 subjects of the sampled population, was gathered from the New York State Division of Criminal Justice Services and Motor Vehicles.

To process the data, Huesmann et al. (1984, 1986) used LISREL, a statistical analysis software program (Joreskog, and Sorbom, 1978) specially designed to analyse causality paths. A summary of the results is presented below, focusing on six points.

A convergence of factors "The conditions most conducive to the learning of aggression seem to be those in which the child is reinforced for his or her own aggression, and in which the child is the object of aggression. Nevertheless, in such situations only some

children become seriously aggressive. Severe antisocial aggressive behaviour seems to occur most often when there is a convergence of these factors during a child's development, but no single factor by itself seems capable of explaining more than a small portion of the individual variation in aggression. Indeed it has been rare in studies of aggressive behaviour to find any factor (other than previous aggression) that correlates much above .40 with aggression." (Huesmann, 1986, p. 127)

A cumulative learning process "The effect of media violence on individual differences in aggression is primarily the result of a cumulative learning process during childhood. Aggressive scripts for behaviour are acquired from observation of media violence and aggressive behaviour itself stimulates the observation of media violence. In both childhood and adulthood, certain cues in the media may trigger the activation of aggressive scripts acquired in any manner and thus stimulate aggressive behaviour. A number of intervening variables may mitigate or exacerbate these reciprocal effects. However, if undampened, this cumulative learning process can build enduring schemes for aggressive behaviour that persist into adulthood. Thus, early childhood TV habits are correlated with adult criminality independently of other likely causal factors Therefore intentions directed at mitigating the effects of media violence and delinquency and criminality should focus on the pre-adolescent years." (Huesman, 1986, p. 138-139)

Television violence and aggressiveness: a reciprocal relation "Taken together, these relations suggest a reciprocal process through which aggression and violence viewing perpetuate themselves and each other. Children who are heavy viewers of television violence regularly observe characters behaving aggressively in order to solve interpersonal problems [...] The child constancy exposed to violence is more likely to develop and maintain cognitive scripts emphasizing aggressive solutions to social problems. These violent scenes may also stimulate aggressive fantasies in which the encoded aggressive scripts are rehearsed, making them more likely to be recalled and utilized in the future [...] as the aggression becomes habitual, it must eventually interfere with both social and academic success. The more aggressive child becomes the less popular child and the poorer academic achiever in school. These academic and social failures may become frustrators instigating more aggressive responses." (Huesmann, 1986, p. 135)

Stability and the precociousness of aggressiveness "Aggressive habits seem to be learned early in life, and once established, are resistant to change and predictive of serious adult antisocial

behaviour. If a child's observation of media violence promotes the learning of aggressive habits, it can have harmful lifelong consequences." (Huesmann, 1986, p. 128-130)

A phenomenon transmitted from generation to generation

"Aggression appears to be not only a stable characteristic within individuals, but one that is transmitted across generations."
(Huesmann, Eron, Leikowitz and Walder, 1984, p. 1128-1129)

From juvenile aggressiveness to adult criminality

"Children who were rated as more aggressive by their peers at age 8 were more likely to be convicted of crimes by age 30, and if convicted, had on the average committed more serious crimes. They were also more likely to abuse physically their spouses and children, and more likely to have been convicted of moving traffic violations including drunk driving. (Huesmann, 1986, p. 128)

Other longitudinal studies (Huesmann, Lagerspetz and Eron, 1984; Bachrach, 1986; Fraczek, 1986; Lagerspetz and Viemeire, 1986; Sheehan, 1986) conducted in six countries (United States, Australia, Finland, Poland, Israel and the Netherlands) have examined the relation between television violence and aggressiveness in the light of sociodemographic, cognitive and transcultural factors. Huesmann et al. (1984) used data gathered from 1979 to 1981 from a sample of 758 American and 220 Finnish children to confirm the existence of a bidirectional model for this relation, in which exposure to television violence generates violent behaviour which, in turn, fuels the need to watch violent programs. The model also includes other variables such as the regularity of exposure to television violence, the degree of realism of the violent messages, aggressive fantasies, social relationships, etc.

In both countries (United States and Finland), the child most likely to be aggressive would be one who (a) watches violent programs most of the time they are on, (b) believes these shows portray life just like it is, (c) identifies strongly with the aggressive characters in the shows, (d) frequently has aggressive fantasies, and (e) if a girl, prefers boy's activities. In addition, such a child is likely to (a) have a more aggressive mother, (b) have parents with lower education and social status, (c) be performing poorly in school, and (d) be unpopular with his or her peers. (Huesmann, Lagerspetz and Eron, 1984, p. 773)

This being said, important intercultural variations have been observed in Australia, Finland, Israel and Poland, which are attributable mainly to the gender and environment of the child.

Concerning gender, Huesmann, Lagerspetz and Eron (1984) observed that, in both the United States and Finland, television violence had a significant influence on the violent behaviour of boys. However, this phenomenon, which was also observed in American girls, did not apply to Finnish girls. Fraczek (1986) observed that in Poland the preference for violent programs predicted levels of physical aggression two years later among boys. Here again, the same relation could not be found among girls. Lastly, Sheehan (1986) found no significant correlation between the aggressiveness rate in Australian children of either sex and exposure to television violence.

The influence of the sociocultural environment has been extensively studied by Huesmann and Bachrach (1986) among Israeli children whether they live in the city and on a kibbutz. Finding a positive correlation between viewing frequency and aggressiveness only among children living in the city, the researches concluded:

Children's aggressive behaviour is not influenced by media when the values and the norms about aggression are clear. Family attitudes and social class are stronger determinants of attitudes toward aggression than is the amount of exposure to TV, which is nevertheless a significant but weaker predictor. (Huesmann and Bachrach, 1986)

Dorothy and Jerome Singer (1976, 1980, 1981, 1983, 1984, 1986) have also produced pioneering work on exterior influences. Attempting to explain the determinants for aggressiveness among pre-school and school-age children, the Singers examined the joint effect of the family atmosphere and the child's character. Their main contribution lies in their use of an overall approach to behaviour which is based on the following dimensions:

sociodemographic dimension: gender, age and socioeconomic status of children; values, degree of stress, parents' styles of mediation and discipline; domestic routine and organization, family cultural and sports activities; rules and habits of television viewing for each member of the family;

cognitive dimension: intelligence quotient (IQ) of child, reading ability, ability to distinguish reality from fantasy and identify with

characters in books and on television, imagination, etc.; intelligence quotient (IQ) of child, reading ability, ability to distinguish reality from fantasy and identify with characters in books and on television, imagination, etc.;

motor-skills dimension: degree of patience shown in play and degree of unruliness shown in the waiting room;

affective dimension: child's emotional reactions, including, among other things, fears and obsessions.

In short, as a result of long and extensive surveys, the researchers have demonstrated that:

- There is a positive correlation between extensive television viewing and aggression evaluated one year later.
- Further, the viewing of adventure programs and other programs intended for adults was more prevalent among non-white children, those of low socioeconomic status and those with lower IQs.
- However, the viewing of cartoons and children's shows on public television networks is more prevalent among white children than those from more privileged backgrounds and those with high IQs. This difference seemed to be stronger among the boys in the sample (N=200, with N designating the total number of subjects in the sample. (Singer and Singer, 1980b)
- Girls appear to be affected more by television than do boys, independent of their IQ, socioeconomic status or ethnic origin. (Singer and Singer, 1981a)
- Exposure to adventure dramas at seven years of age may predict the degree of physical aggressiveness of the subjects two years later (N = 63; p .05; b2 standardized-0.23). (Singer, Singer and Rapaczynski, 1984)
- The viewing of adventure dramas is on the average four times greater among the most aggressive children, including the least frequent viewers.
- However, the calmest children watch benign shows like "Mister Rogers' Neighbourhood" much more frequently than their aggressive counterparts. (Singer and Singer, 1986)
- Certain types of television programs (e.g., "Mister Rogers' Neighbourhood", "Sesame Street", and neutral films), when watched for than 30 minutes per day, exert a positive influence on the child's imagination, and lead to a decrease in aggressive tendencies. (Singer and Singer, 1986)

- The critical age, (i.e., the period when television strongly influences behaviour), coincides with the third grade.
- Frequent television viewing plays a role in exacerbating nervousness, anxiety, fears and aggressive tendencies.
- Television viewing accustoms children to easy solutions and makes them want to watch more television.
- Parents who watch a lot of television, who have no other interests and who are not concerned with setting rules for viewing television may create a family environment that encourages pessimistic tendencies among their children.
- Children's aggressive behaviour not only reflects the models inculcated by their parents or their reaction against parental abusive authority, but also reflects television programs whose content is intended to instill fear or excitement. (Singer and Singer, 1986)

In conclusion, longitudinal research has proven that television violence is part of a complex pattern of cumulative relations that promote aggressiveness. As Eron (1986, p. 167) comments, by simply breaking the pattern involving this type of violence and aggressive behaviour in the United States, we should "be able to reduce the amount of violence in this country by 9 to 10% (the amount of variance in aggression explained by television violence)". Rosenthal (1986) shares the same position, stating that "it seems clear that our ability to predict and control antisocial behaviour is not at all trivial in practical terms, despite the apparently small results obtained in most studies. For example, there is nothing trivial about being able to reduce rates of aggressive behaviour from about 62 to about 38% by means of an experimental intervention, even though the proportion of variance accounted for is less than 6%." (p. 153)

2.3 Naturalist studies

Sometimes, events may occur in a natural framework, that allow researchers to carry out a before-after causality study. In Canada, Tannis Williams (1977, 1986) and her colleagues (Joy, Kimball and Zabrack) were able to take advantage of the late introduction of television in an unnamed village in British Columbia (Notel) to compare the behaviour of 16 children from the village to that of 29 children in two locations of the same type where television was already installed: United, which received one CBC station, and Multitel, which received CBC and three American stations.

Their analysis was based on direct observation of the play behaviour of the three groups of children as well as on information gathered from teachers and peers. Two years after television was introduced in Notel, the number of physical attacks increased by 160% (p. 001). The Notel children were not only more aggressive than before the introduction of television, but also more aggressive than the children from the other two communities. The child's age, preference for violent programs, aggressive tendencies and the number of hours spent watching television did not seem to attenuate the cause and effect relation. It should be noted that aggression rate of the control groups remained stable during the study

On the basis of these results, the researchers confirmed the existence of a ceiling affect, in which television violence increases the level of aggressiveness up to a certain threshold, beyond which no significant change appears to occur.

A similar study (Granzberg, 1980, 1982), which was conducted in northern Manitoba, compared the aggressiveness rate in a group of 33 children living in a Cree community (Norway House) that had recently received television, to that in a group of 16 children from a similar community (Oxford House) that at the time of the study did not yet have television. The children were monitored systematically for four years. The data showed that, despite the importance assigned by the Cree culture to the peaceful resolution of conflict, contact with television led to a significant increase in the rate of fighting. Aside from the number of black eyes and the like that occurred in the fights, the researchers observed the development of violent behaviour that had never been seen before in the community. For example, several days after the broadcast of an episode of "Happy Days", in which the hero, wearing a leather vest bearing the name of the gang "Red Demons", got into a fight, rival gangs such as the "Red Demons", and "Green Demons" sprang up in the school. This phenomenon seriously disturbed the normal functioning of educational activities in the community

3. Meta-Analyses

As their name implies, meta-analyses use secondary sources (existing studies) to infer new results. However, unlike a simple literature review, meta-analyses evaluate all of the quantitative data that has been gathered, assigning to each study a role similar to that of a survey respondent. To date, two meta-analyses have been performed, both supporting the aggression stimulation thesis. The first was based on 67 experiments involving approximately 30,000 subjects (Anderson, 1977) and the second assessed 230 studies involving approximately 100,000

subjects (Hearold, 1986). According to Comstock and Strasburger (1990, p. 32), these studies maintain that:

A large majority of studies record a positive association between exposure to television violence and aggressive and antisocial behaviour. This holds for all ages and measures.

Exposure to violent programming is associated with higher levels of aggressive behaviour and lower levels of positive or altruistic behaviour. Similarly, exposure to portrayals of altruistic behaviour is associated with higher levels of prosocial behaviour and lower levels of aggressive and antisocial behaviour.

As a whole, the literature gives little comfort to those who assert that the findings are evenly divided, the studies are inferior, or that violence on television does not influence behaviour.

4. Epidemiological Studies

Epidemiological studies are concerned with the influence of certain risk variables on the abnormal increase of pathological behaviour. Research of this kind has shown that whenever suicides are portrayed in the media, whether as news stories or fiction, there is a short-term wave of analogous suicides. In a long series of studies carried out in the United States, Phillips (1974, 1979, 1980, 1981, 1983, 1984, etc.) provided surprising statistics on the relation between publicized suicides and imitative suicides. A study of the number of suicides reported on the front pages of the *New York Daily News*, *Chicago Tribune* and *London Daily Mirror* each month from 1946 to 1968 revealed that the suicide rate in the adult population increased in proportion to the space devoted to this subject by the press. Another study revealed a positive link between the rate of fatal traffic accidents in California between 1966 and 1973 and the number of suicides covered on the front page of five of the largest daily newspapers in the state. In the three days following press coverage of a suicide, an increase of 3196 in traffic fatalities was observed in the regions corresponding to the distribution areas of these newspapers. The relation between sensationalist reports in the press and the suicide and traffic fatality rate is statistically significant and does not fluctuate according to the season, day of the week, or linear tendencies involved in the phenomenon.

The same type of relation was observed with the depiction of suicide on soap operas. Using computer data on suicides among whites in 1977 provided by the National Centre for Health Statistics, Phillips (1982) observed that accidental traffic deaths increased perceptibly the same day or for a few days after the fictitious portrayal of a suicide. The rise in traffic fatalities, which concealed imitative suicides, again could not be attributed to (a) fluctuations related to the day of the week (b) effects of holidays (Phillips and Liu, 1980); (c) effects of

depictions of non-fictional suicides (Bollen and Phillips, 1981; Bollen and Phillips, 1985); or (d) linear tendencies related to accidental mortality.

Furthermore, these voluntarily caused accidents were confined to urban areas and involved mainly women, who are the principal audience for soap-operas.

Although some studies (Messner, 1986; Kessler and Stipp, 1984) question the impact of television violence on suicides, others (Phillips and Paight, 1987) maintain that the difficulty of explaining this phenomenon, particularly in adolescents, stems from uncertainty about the frequency of media exposure required to stimulate imitation. This position is also advanced in the Hafner et al. (1987) study in West Germany, which argues that repeated exposure to the theme of suicide contributes to, without necessarily being the principal cause of, subsequent self-destructive behaviour, regardless of the population group.

Lastly, Stack (1987), in a sociological analysis of suicides by celebrities carried out between 1948 and 1983, examined the types of publicized incidents that are likely to increase the monthly rate of imitative suicides. Based on a taxonomy of suicides of national and international interest, Stack's analysis revealed that the (American) nationality of the star plays a crucial role in the identification process and that only reports concerning suicides by celebrities from artistic or political milieus exert a morbid attraction on viewers. This magnetism is reminiscent of the wave of suicides that occurred at the end of the eighteenth century in Europe after the publication of Goethe's novel *The Sorrows of Young Werther*. The Werther effect, which illustrates the sociological principle of social proof, arises from certain conditions that model individual conduct, including patriotic feelings and fascination with the entertainment and media world. However, the effect does not extend to the publicized suicides of sports, religious and business figures. The reason why these categories do not have any influence on the American suicide rate has yet to be explained.

Another aspect of epidemiological research, the impact of television on imitative homicides, has recently been studied by Centerwall (1989 a, b) who compiled archival data on variations in the homicide rate in three societies—South Africa, Canada and the United States—which have a similar historical, economic and sociopolitical development. The analysis involved an enormous sample of 139,680,000 subjects, including 2,342,000 white South Africans, 125,266,000 white Americans and 12,072,000 Canadians. Two periods were examined, 1954 (when television was introduced in North America) to 1974, and 1975 (when the South African government removed its ban on television) to 1983. The statistical controls carried out for each group tend to confirm the presence of a causal relation between exposure to television in general soaring rates of social violence. Specifically, the results showed a significant correlation (0.82, - 0.0083) between the moment at which television was introduced and the subsequent rise in the homicide rate in each region. One of the principal findings was that the rate rose first in the large urban centres, then in the small towns, paralleling the introduction of television. In 1983, the homicide rate among the white population

of South Africa reached 3.9 per 100,000, which greatly exceeded the rate in the 20 years previous to the introduction of television. In addition, the 1983 rate was 56% greater than that recorded in 1974. On the other hand, the rate among the white Canadian and American populations between 1974 and 1983 remained stable (around 2.5/2.4 and 5.8/5.6 respectively). In the United States and Canada, the increases occurred earlier, in the years immediately following the introduction of television, with the homicide rate generally doubling within 10 to 15 years.

The evidence presented in this study indicates that, of the approximately 20,000 homicides occurring annually in the United States (NCHS, annual volumes), 50%—or approximately 10,000 homicides annually—are caused in part by exposure of the U.S. population to television. (Centerwall, 1989a, p. 47)

These conclusions are all the more striking in that no other factor, whether changes in the level of consumer goods (ownership of one or more television sets per family), age, level of urbanization, socioeconomic mobility, alcohol consumption, abolition or restoration of the death penalty, or even the availability of firearms can explain the epidemic of homicides.

Rather than building a consensus, these analyses have revived, as we will see, old quarrels between the proponents of negative effects and the proponents of the reduction or absence of effects. However, for the moment, one is inclined to admit along with Friedrich-Cofer and Stein (1986) that "the weight of evidence from different methods of investigation supports the hypothesis that television violence affects aggression." (p. 368)

B. REDUCTION OF AGGRESSIVENESS

1. Catharsis

Rooted in Aristotelian aesthetics, the notion of catharsis refers to the process of emotional purging that occurs in tragedy, whereby spectators recover their peace of mind by participating in acts of aggression by proxy. Feshback (1961), an ardent defender of the "poetic purification" theory, advanced the hypothesis that exposure to television violence may fulfil the same function and reduce the aggressiveness of those who view it. In an experiment involving a sample of young men, he observed that subjects who were insulted by an experimenter and then exposed to a violent film displayed less verbal hostility to the experimenter than subjects who were treated in the same way who later viewed a "neutral" film. Since this difference in behaviour only occurs when the individual is provoked, Feshback concluded that symbolic violence has a cathartic effect.

The catharsis theory, which has since been discredited by the scientific community, has been the subject of numerous critical studies. Goranson (1970), for example, criticizes Feshback for the fact that his experiment did not include any justification of the violence depicted, and many have inhibited aggressive tendencies, thus skewing the results. Zillmann, Johnson and Hanrahan (1973), who repeated Feshback's experiment, showed subjects the same violent film (which portrays a boxing match that the hero wins) and a modified version in which the hero loses. It appears that the subjects who saw the version with the happy ending showed fewer subsequent signs of stimulation and aggressiveness than those who saw the tragic ending. Manning and Taylor (1975) suggest that catharsis occurs when verbal hostility is depicted, while exposure to physically aggressive scenes produces the opposite effect, the stimulation of aggressiveness. In the end, there is nothing to indicate that the viewing of real violence provides a cathartic effect (Milburn, 1980).

2. Empathy

Like the catharsis thesis, the empathy thesis maintains that violent scenes in films produce sympathy for the victim, which translates into aversion toward or fear of aggressive behaviour. An experiment conducted by Biblow (1973) suggests that exposure to violent material reduces the aggressive predisposition of anxious children. Other researchers (Kaplan and Singer, 1976) merely refer to a certain number of studies to corroborate these results. Lastly, Leyens (1977) believes that humour, insofar as it defuses the emotional charge in violent content, may constitute a factor in inhibiting aggressive behaviour.

C. ABSENCE OF EFFECTS

The final section of this report deals with a type of research that has observed that exposure to television violence has no particular effect. Indeed, several field surveys have produced results invalidating the thesis that television violence has a negative impact. Although these studies are marginal, they have provoked a great deal of controversy since they use reliable methods and sometimes even the same data as aggressiveness stimulation studies.

1. Counter Studies

A correlative study published in 1972 (Hennigan et al.) took advantage of a decision by the Federal Communications Commission (FCC) freezing new licences for television stations between 1949 and 1952. The study compared the crime rate in certain American cities already exposed to television with that of comparable cities that, because of the FCC decision, did not receive television signals until after 1952. The results reveal that violent crimes, burglaries, and even car thefts do not appear to be correlated with the introduction of television.

However, the study did show that the number of petty thefts increased significantly with exposure to the medium; this phenomenon was attributed to the effects of advertising. The favourite medium of advertisers, television promotes the lifestyles of the middle and upper classes, causing an uncontrollable desire for the consumer goods depicted. However, a year later, Milgram and Shotland (1973) observed that there was no link between exposure to television violence and theft.

Messner (1986) also called into question the link between the exposure to television violence and the crime rate. Using statistics from the Federal Bureau of Investigation (FBI), Messner established a link between the offences committed in 1980 (including homicide, rape, theft and assault) with exposure to five prime-time television series judged to be the most violent ones that season by the National Coalition on Television Violence (NCTV). Messner calculated an index of exposure to television violence on a monthly basis, terminating at the end of 1980. After studying the crime rate for the different types of offences, he combined them to create a composite variable. Paradoxically, the results revealed that

For each measure of violent crime, the estimate for the level of exposure to television violence is negative, and, with the exception of assault, all coefficients are statistically significant. In other words, SMSAs (Standard Metropolitan Statistical Area) in which large audiences are attracted to violent television programming tend to exhibit low rates of violent crime. (Messner, 1986, p. 223-224)

On the other hand, the study reveals that the crime rate is positively correlated with the percentage of blacks in the population, economic inequality (the Gini coefficient), ratio of men to women (crimes increase in areas where there is a predominance of men) and the size of the population.

Returning to Phillip's survey (1982), Kessler and Stipp (1984) attempted to demonstrate that there is no significant relation between the viewing of soap operas and the suicide rate. Their analysis emphasized what they believe to be methodological error on Phillip's part

The error in Phillip's paper stems from the fact that he used newspaper summaries as sources for soap opera suicide stories and, in eight out of 13 cases, misspecified the date of the event. This mistake invalidates his before-after analysis strategy. (p. 51)

A survey (Milavsky, Stipp, Kessler and Rubens, 1982) carried out among 2,400 primary-school students (boys and girls from 7 to 12 years) and 800 adolescents (from 12 to 16 years) measured the relation between exposure to television violence and subsequent aggressive behaviour. Causal analyses, carried out at regular intervals over a period of three years, revealed no significant association

between the two phenomena "This study did not find evidence that television violence was causally implicated in the development of aggressive behaviour patterns among children and adolescents over the time periods studied. At the same time, the analysis model used to detect television exposure effects showed that there are social and individual characteristics which are related to significant change in subsequent aggression over the time periods studied." (Milavsky et al., p. 487)

However, this conclusion is disputed by Cook, Kendzierski and Thomas (1983), who see a statistically significant relation:

We believe that their analysis nonetheless (a) failed to prove strong models of television's cumulative impact; (b) failed to prove the possibility of interactions between television viewing, gender and SES (Socioeconomic status) levels; (c) did not fully prove the implications of consistently positive small coefficients and large estimates with longer lags; and (d) relied excessively on tests of statistical significance that have questionable power because of badly skewed distributions and only moderate sample sizes for analyses involving longer time lags. (p. 190)

Huesmann (1984) adds that the research carried out by Milavsky *et al*, although it is highly rigorous from a methodological perspective, operates in a "theoretical vacuum" which becomes evident once the results are analyzed and interpreted.

Milavsky *et al*'s causal analyses for boys show effects very similar to what I and my collaborator report in our binational study. Milavsky *et al*'s interpretation, however, is quite different. The beta coefficients for the various wave pairs are mostly positive, but only a few are significant. Does this demonstrate a causal effect? Milavsky *et al*. say no, because a few significant coefficients are expected by chance. On the other hand, of the 15 regressions they calculated, 12 yielded positive betas. If there were really no effect of violence viewing on aggression, the probability of such a result would be less than 1 in 1,000. Thus, I would argue, the overall effect is significant. (p. 285)

2. The Freedman Case

Although Freedman (1984, 1986) did not conduct empirical research in the strict sense, he led a kind of anti-effects "crusade" in Canada. In an indictment of the Friedrich-Coffer and Huston synthesis (1986), he described the limits of laboratory research, basing his thesis on three arguments. First, Freedman contended that experimental research clashes with ethical considerations, which ban the use of any mechanism that excites anger to evaluate antisocial behaviour comparable to that found in real life. Second, such experiments are conducted in an atmosphere that tacitly approves violence, maximizing the aggressive reactions

observed. Thirdly, subjects in such experiments are exposed to a steady diet of television violence that cannot be compared to the scenes of aggression shown in regular programming.

In short, it seems perfectly clear that the laboratory studies overestimate the effect of television violence on aggression. The only real question is whether the existence of an effect outside the laboratory can be reasonably inferred from the research done in the laboratory. (Freedman, 1986, p. 372-378)

Freedman hastens to remind those who remain sceptical about the negligible effects of television that the conclusions of research on persuasion show otherwise. The work of Hovland (1959) established in fact that attitude changes, which are relatively easy to obtain under laboratory conditions, are, on the other hand, extremely difficult to reproduce in the natural environment. Given the fact that attitudes are more malleable than behaviour, there is little or no chance that television has an effect on the level of aggressiveness

Friedrich-Coffer and Huston (1986) comment on this criticism:

Responsible psychologists and other social scientists have been obliged to acknowledge the limit of their theoretical and research paradigms. Social research alone will not settle the policy questions about television fare because current conceptualizations and methods cannot provide irrefutable causal proof. We can at best argue probabilities. The weight of theory and convergent evidence supports the likelihood that television contributes to aggression for many young people [...] The question is not merely one of fallible empirical methods, but what uses and consequent effects of media are in the public interest. (Friedrich-Coffer and Huston, 1986, p. 370)

Lastly, Rule and Ferguson (1986) maintain that:

Concern with establishing the validity and robustness of the relation between violence viewing and the expression of aggression by an observer has resulted in a relative neglect of understanding the mediators of aggression. Empirical attention given to mediators has been fragmentary [...] Recent efforts have been directed toward producing programs of prosocial nature for children (Heinz, 1983) as well as intervention in the school (Singer and Singer, 1983). The importance of these practical efforts cannot be underestimated [...] Development of effective programs depend crucially on our experimental findings. We have only begun. (p. 44-45)

CONCLUSION

In this synthesis of the literature, the right of the television public to programming that, without imposing artistic or economic censorship, can be viewed by the whole family, including young children, stands out clearly. Young consumers deserve to be protected against aggressive images even more than adults. Following the example of Tannenbaum and Gibson (1980), one should rightly be concerned about the fact that the children who are the most vulnerable to television violence, who at this moment are suffering from parental neglect, are the greatest loses in this debate. Although television violence is not solely responsible for aggressive tendencies and antisocial behaviour (suicides, homicides, other crimes and distorted perceptions), it is among the risk factors involved. In fact, most studies agree that there is a positive, though weak, relation between exposure to television violence and aggressive behaviour. It is true, however, that this bidirectional relation cannot be confirmed systematically in all cultures or even in one particular culture. Gender, intelligence, social class, race and frequency of viewing sometimes pose a problem. In addition, some of the research has yielded contradictory results. However, as Van der Voort (1986) emphasizes, it would be illogical to conclude "that a phenomenon does not exist simply because it is found at times not to occur or only to occur under certain conditions"

One thing is certain: the effects of television violence can be controlled in pre-adolescent children by certain factual interventions involving social cognition. A strategy of media literacy, implemented by the various agents responsible for socializing children—particularly parents, schools and the broadcasting industry—would be a first step in this direction. If Comstock and Strasburger (1990) can be used as a guide, two rules should be kept in mind: on one hand, to avoid shocking the sensibilities of young viewers and, on the other hand, to increase their knowledge of the medium. This is akin to the conclusions of Hodge and Tripp (1986), who believe that the decoding of violent content provides us with a way of distancing ourselves from it.

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