

ANIMALS IN TELEVISION

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INTRODUCTION

We propose research designed to contribute to the development of a mental health research and training program to learn more about human behavior through the study of human-pet relationships. The accumulated experience, resources and energies of a team whose research about television violence has made a significant impact on national awareness and policy is now being directed to several new objectives. The objectives include a scientific analysis of the image of animals, pets and human-animal/pet relationships in television drama and television commercials.

Objectives

Television is the mainstream of the common symbolic environment which cultivates the most widely shared conceptions of reality and of value. What have been its contributions to public conceptions in areas

of crucial relevance to the personal and societal context in which animals and pets exist in America? Have these contributions changed in the past ten years? What have viewers learned from television's most vivid lessons -- its dramatic fare -- about animals, pets and human-animal relationships?

This project will begin with the secondary analysis of our television content and cultivation data archives and will go on to develop ~~and implement a procedure for monitoring of the role of television in~~ shaping public conceptions of animal behavior and the nature of human--animal relationships.

The proposed project is based on a unique data bank and research design called Cultural Indicators.¹ This research began with the investigation of violence in network television drama in 1967-68 for the National Commission on the Causes and Prevention of Violence. It continued under the sponsorship of the Surgeon General's Scientific Advisory Committee on Television and Social Behavior, the National Institute of Mental Health, the American Medical Association, the Office of Telecommunications Policy, and the Administration on Aging. Although violence-related findings and indicators have been published most widely, the approach was broadly based from the beginning to collect observations on the role and symbolic functions of many aspects of life presented in television drama.

The research consists of two interrelated parts: (1) Message System Analysis -- monitoring the world of television, and (2) Cultivation Analysis -- determining the conceptions of social reality that television

¹ A list of publications describing the analytic framework of Cultural Indicators as well as some of the results of this research may be found in Appendix I.

tends to cultivate in different groups of child and adult viewers. The analyses provide information about the geography, demography, character profiles, group relations, and action structure of the world of television, and will focus these images and lessons upon the portrayal of animals and human-animal relationships.

Message System Analysis

Cultural Indicators research begins with Message System Analysis, a flexible but precise tool for making orderly objective and cumulative observations of programming content. This technique allows us to identify almost any aspect of the television world, so that we can then test its contribution to viewers' conceptions of the real world.

Message System Analysis has been performed on more than ten annual samples of prime-time and weekend daytime network dramatic programming. The data base includes more than a thousand television programs and several thousand characters, actions and relationships. Coded observations are stored in a computer, available for further analysis and study.

The cumulative data base enables us to identify long term trends. For example, our annual Violence Profile and Index has charted the fluctuations of violent relationships and action in dramatic programming for the last ten years. With the annual Message System Analysis and our data bank, we can trace similar fluctuations and developments relevant to the portrayal of animals.

Cultivation Analysis

Our up-to-date data bank of patterns and trends in the world of television drama is the foundation for our studies of viewers' conceptions of social reality.

The second step of the research, therefore, determines what viewers learn about the real world from the world of television drama, a world in which Americans spend more time than in work or school or play. In order to uncover this information, we turn the findings about the television world into questions about social reality. These questions have a "television answer" -- the way it is in the world of television -- and another, different answer which is usually more typical of reality and are presented to viewers as part of national probability and quota surveys.

While no member of society can remain unaffected by an influence so pervasive as television, those who spend more time in the world of television have been found to be more likely to perceive the real world in terms of television's lessons. Responses to our questions allow us to assess the degree to which the more frequent viewers give answers which reflect television's image of the world. These patterns are examined in light of various controls -- age, sex, education, occupation, etc. -- in order to determine the extent to which it is possible to view television's influence as independent, complementary or contrary to other major social variables.

Background

Television is accepted as a normal and important part of American life. Most Americans own at least one television set², most people watch

² Jack Lyle, "Television in Daily Life: Patterns of Use, Overview," Television and Social Behavior, Vol. IV, Television in Day-to-Day Life: Patterns of Use, eds. Eli A. Rubinstein, George A. Comstock and John A. Murray, (Washington, D.C.:GPO, 1972), pp. 1-32.

television for at least two to three³ hours each day⁴, and in most areas of the United States, television is available round the clock. Moreover, television is so pervasive that researchers have noted that by the age of eighteen, a child has spent as much time watching television as in school⁵.

Although the communications research literature is replete with content analyses of mass media worlds, there are very few studies that have specifically focused upon the portrayal of animals and human-animal relationships in television programs. The paucity of research on the portrayal of animals in this medium is especially important because the portrayal of animals in the fictional world of television programming may have an important symbolic function. It is widely recognized that animals are the universal symbols of mythology and dreams. Immediate and profound responses are often evoked by their presence. As early as the 6th century B.C., Aesop related the following anecdote as a commentary upon the power of fictionalized animals to captivate the attention of any audience:

³ More recent estimates put this figure at five to seven hours per day.

⁴ J.P. Robinson, "Toward Defining the Function of Television," op. cit. pp. 568-603; and Lyle, loc. cit.

⁵ For example, Wilber J. Schramm, Jack Lyle, and Edwin P. Parker, Television in the Lives of Our Children, (Stanford, Calif: Stanford University Press, 1961).

Demades, a famous Greek orator, was once addressing an assembly at Athens on a subject of great importance and in vain tried to fix the attention of his hearers. They laughed among themselves, watched the sports of the children and in twenty other ways showed their want of concern in the subject of the discourse. Demades, after a short pause, spoke as follows: "Ceres one day journeyed in company with a swallow and an eel." At this there was marked attention and every ear strained now to catch the words of the orator.

Scholars in various disciplines have gone to great lengths to explicate the role of animals as symbols in art⁷, literature⁸ and folklore⁹. In Animals with Human Faces, Beryl Rowland points out that despite their animal form, these creatures have become symbols of qualities possessed by man¹⁰. Anthropomorphism has also been noted in a study of animals in children's fiction. Margaret Blount has noted that "apart from the rare, objective nature stories...the animals are not really themselves, but disguised people."¹¹ Fictional animals may

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Quoted in Margaret Blount, Animal Land: The Creatures of Children's Fiction, (New York: Morrow, 1975), p. 21.

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Kenneth M. Clark, Baron Clark, Animals and Men: Their Relationship as Reflected in Western Art from Prehistory to the Present Day, (London: Thames and Hudson, 1977).

8

Kenneth Inniss, D.H. Lawrence's Bestiary: A study of his use of animal trope and symbol, (The Hague: Mouton, 1971).

Blount, op. cit.

9

Beryl Rowland, Animals with Human Faces: A Guide to Animal Symbolism, (Knoxville: University of Tennessee Press, 1973).

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Ibid.

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Blount, p. 15.

portray many different dramatic roles; they may be major or minor characters, be employed, have families and succeed and/or fail at various tasks.

As the source of proverbs and the subject of fables, it is clear that seemingly innocent animals can act as vehicles for many types of messages. For example, in a report on violence in television drama, Gerbner has stated that all characters in the symbolic world serve human purposes¹² and all may influence perceptions of social reality.

Dorfman and Mattleart have investigated the role of animals in comic books as purveyors of cultural imperialism.¹³ They analyzed, from a Marxist perspective, a sample of Disney comics which were published for a Latin American audience. They concluded that the characters in the comics (animals) reinforced capitalist values and preserved the status quo. This comic book world was predominantly male; it was populated with clever materialistic urbanite heroes and dull unmaterialistic natives. Women were subordinate to the men and were cast either in the role of the humble servant or the "courted beauty queen." Social differences existed not only between the men and the women, but between the wealthy and the poor as well. Finally, Dorfman and Mattleart made moral judgments concerning both the content of these Disney comics and the social, economic and political climate of Latin America. However, their data did not seem to have been acquired by

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George Gerbner, "Violence in Television Drama: Trends and Symbolic Functions," in Television and Social Behavior, Vol. 1, eds. George Comstock and Eli Rubinstein, (Washington, D.C.:GPO, 1972), pp. 28-187.

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Ariel Dorfman and Armand Mattleart, How to Read Donald Duck -- Imperialist Ideology in the Disney Comic, (New York: International General, 1975).

objective and quantitative content analysis, and as a result, their conclusions may be based upon subjective, albeit insightful, interpretation. Nevertheless, the study demonstrates how animals, when portrayed as human beings in a dramatic context, may assist in the cultivation of ideas and values.

A few studies of children's television cartoons have been completed. Busby studied the portrayal and behavior of male and female cartoon characters to identify sex-role standards.¹⁴ Her sample consisted of characters in 20 cartoons broadcast on the networks during the 1972-73 season. This analysis focused upon the physical appearance of the characters, their employment outside of the home, the division of labor within the house, societal and family power and personality traits. Most of these cartoons were populated with human characters who lived in traditional family situations. Wives performed the homemaking duties, while husbands were responsible for the family's economic support. Busby also found that males significantly outnumbered less capable and weaker females; the male cartoon characters consisted of 2 subgroups -- the overweight bungling husbands and the single, aggressive and adventurous heroes. Although not stated explicitly, it appears that cartoon animals were included in this analysis. Unfortunately, the data are presented so that similarities and/or differences between human and animal characters are obscured. There is, consequently, no way of knowing whether the portrayal of animals complements or contradicts these sex-role stereotypes.

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Linda Busby, "Defining the Sex Role Standard in Network Children's Programs," Journalism Quarterly, 51:4, Winter 1974, pp. 690-96.

Streicher also analyzed characters in cartoon programs and also found that the television cartoon world is predominantly male.¹⁵ Like Busby, Streicher analyzed the behavior of cartoon animals together with that of humans. Streicher also mentions that when human female characters gave a skillful performance (such as cheerleading), their actions were often duplicated by a cartoon dog or other pet.

Finally, Long and Simon studied the roles and statuses of women in a sample of dramatic television that included family-oriented and cartoon programs.¹⁶ Their findings, based on a sample of only 34 characters, dovetail with those of Busby and of Streicher. The overall image of women in these programs was traditional and sexist. Women were portrayed as dependent and their function in the context of the family was socio-emotional. Although animal characters were included in Long and Simon's sample, they were not analyzed separately.

At the present time, therefore, there is no published study which examines the portrayal and symbolic functions of animals in television drama. This gap in communications research exists despite the fact that over a seven-year period, animals have been shown to account for close to 10 percent of all television characters.¹⁷ In cartoons alone, they comprise approximately one quarter of the population of the television

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Helen White Streicher, "The Girls in the Cartoons," Journal of Communications, 24:2, Spring 1974, pp. 125-29.

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Michele L. Long and Rita J. Simon, "The Roles and Statuses of Women on Children and Family TV Programs," Journalism Quarterly, 51:1, Spring 1974, pp. 107-110.

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Cultural Indicators Project, Data Archives.

world.¹⁸ Research on animals in television drama is clearly necessary when one couples these demographics with the animals' power to rivet an audience and convey human messages. As Dorfman and Mattleart point out, "the use of animals is not in itself either good or bad; it is the use to which they are put, it is the kind of being they incarnate that should be scrutinized."¹⁹

The above discussion reveals that knowledge about the portrayal of animals and human-animal relationships in television programming is almost non-existent. We know that most animals are portrayed anthropomorphically and that sex-role stereotypes are especially prevalent among the "humanized" animal population. However, that is basically all we know -- we know relatively little about human-animal relationships in regard to the type of characters who have these relationships, of the context in which these relationships occur, and the nature of these relationships. We also have virtually no information about whether animal portrayals in television drama have increased or decreased over the past ten years. Moreover, no one has examined how animals are presented in television commercials. Finally, we know nothing about how these portrayals affect people's perceptions of social reality; that is, what do people learn about animals and/or relationships from television?

The many stages of this study will provide answers to these questions. The proposed project will provide a reliable and detailed

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Nancy Rothschild, "The Symbolic Function of Animals in Television Drama," Unpublished paper, The Annenberg School of Communications, Spring, 1977.

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Dorfman and Mattleart, op. cit., p. 41.

picture of the way animals and human-animal relationships are presented in television drama and commercials. It will provide information about how these images may affect people's perceptions of social reality and how this information can fit into the University of Pennsylvania's School of Veterinary Medicine's ongoing research and training project examining human behavior from the perspective of the way humans interact with their pets and/or other animals.

Rationale

Television is the chief creator of synthetic cultural patterns (entertainment and information) for the most heterogeneous mass publics in history, including large groups that have never before shared in any common public message systems. The repetitive pattern of television's mass-produced messages and images forms the mainstream of the common symbolic environment that cultivates the most widely shared conceptions of reality. We live in terms of the stories we tell -- stories about what things exist, stories about how things work, and stories about value and worth -- and television tells them all through news, drama, and advertising to almost everybody most of the time.

Television drama is the heart of that process because it offers the most diverse audience of viewers a common and stable pattern of "facts" about life and the world. No member of society escapes the lessons of almost universally enjoyed entertainment, and many millions of viewers seek little other information.

The basic research paradigm -- Cultural Indicators -- underlying the proposed study begins with Message System Analysis, a flexible tool

for making orderly, reliable, and cumulative observations of programming content. The technique facilitates the identification of almost any aspect of the television world, such as aspects of characterization so that their contribution to viewers' conceptions of the real world can be determined.

Large aggregates of television output (rather than individual selections from it) are the systems of messages to which total communities are exposed. Message System Analysis focuses on the gross, unambiguous, and commonly understood facts of portrayal. These are the features that can be expected to provide bases for interaction and common assumptions and definitions (though not necessarily agreement) among large and heterogeneous mass publics.

The purpose of the analysis is to provide systematic, cumulative, and reliable observations about many different aspects of program content, such as the portrayal of animals and the nature of human-animal relationships.

The second half of this research paradigm -- Cultivation Analysis -- uses findings from the Message System Analysis to investigate relationships between television content and viewers' conceptions of social reality.

Cultivation Analysis is the study of what is usually called effects or impact.²⁰ The "effects" of a pervasive medium upon the composition and structure of the symbolic environment are subtle, complex, and intermingled with other influences. Moreover, the concept of causation,

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See George Gerbner and Larry Gross, "Living with Television: The Violence Profile," Journal of Communication, Spring, 1976, for a discussion of why these terms are inappropriate to the study of broad cultural influences.

borrowed from simpler experimental studies in the physical and biological sciences, is not fully applicable to the steady flow of images and messages that comprise much contemporary popular culture.

People are born into a culture that cultivates their needs as well as their satisfactions. Culture affects assumptions about facts as well as responses to them. In modern cultures demand and supply are manufactured. Social and psychological characteristics draw individuals to select certain types of content which, in turn, nourish and cultivate those characteristics. Innumerable facts (and values) outside of personal experience can only be learned and related values derived from the mass media or from others who have learned them from the mass media. Increasingly, media-cultivated facts and values become standards by which we judge even personal experiences and family and community behavior. The general stability of, rather than any specific change in, these patterns is the principal contribution of media to ideas and behavior.

A persistent difference in the exposure to messages that cultivate perspectives need not result in a major shift in personal outlook and behavior to have profound consequences. A barely perceptible shift of a few degrees average temperature can lead to an ice age or make the desert bloom. A slight but pervasive tilt in the cultural climate can have major social and public policy implications. The closer a vote, a decision, a public policy issue, the smaller the shift needed for change, and the more rigid the forces of stability might be. This is one reason why we prefer to speak of the contribution of television to the cultivation of common perspectives rather than of its achieving any specific or preconceived goals, impact, or effects.

Cultivation Analysis begins with the patterns found in the "world" of television drama. The message system composing that world presents

coherent images of life and society. How are these images reflected in the assumptions and values held by audiences? How are the "lessons" of symbolic behavior presented in fictional forms applied to conceptions about real life?

The problem of studying television's "effects" is compounded by the fact that today nearly everyone "lives" to some extent in the world of television.²¹ Without control groups of non-viewers it is difficult to isolate television's impact. Experiments do not solve the problem, for they are not comparable to people's day-to-day television viewing. Our approach reflects the hypothesis that heavier viewers of television, those more exposed than lighter viewers to its messages, are more likely to understand social reality in terms of the "facts of life" they see on television. To investigate this hypothesis, samples of respondents are partitioned according to television exposure. By contrasting light and heavy viewers, some of the difference television makes in people's conception of social reality can be examined.

Naturally, there are factors other than television viewing that may account for some of these differences. Since it is well known that heavy television viewing is part and parcel of a complex syndrome which also includes lower education, lower mobility, lower aspirations, higher anxieties, and other class, age, and sex-related characteristics, our analyses are designed with statistical controls for these and other demographic and descriptive variables. That is, these characteristics are held constant when comparing responses of heavy and light viewers in relatively homogeneous groups. For example, since college-educated

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Marilyn Jackson-Beeck, "The Non-Viewers: Who are they?", Journal of Communication, Summer, 1977.

respondents may answer differently than non-college respondents, we examine heavy and light viewer respondents within the college and non-college groups as well as between them.

The investigation of television's relationship to viewers' conceptions of social reality begins with systematic analysis of the world of television drama. Message System Analysis reveals how certain "facts" and aspects of social reality are presented in television drama; these "facts" are then compared with other conceptions of the same "facts" and aspects derived from direct and independent observations, such as U.S. Census figures.²²

Once the "television view" and the "real world" or some other view of selected facts and aspects of social reality have been determined, questions are constructed that focus upon these facts and aspects of life. Each question has an inferred or objectively determined "television response" reflecting the "television view" of the facts, and a "non-television answer."

Next, heavy and light viewers are questioned about their perceptions of the facts. To the extent that patterns of life presented in dramatic television programs cultivate distinct conceptions of social reality, heavy viewers are expected to be more likely than light viewers to choose answers that reflect television perspectives. Our research strategy, instrumentation, and samples are designed to establish the extent to which and the ways in which television cultivates such patterned responses.

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For example, in prime-time television drama aired from 1969 through 1977, 64 percent of major characters and 30 percent of all characters (major and minor) were involved in violence as perpetrators, victims or both. According to the 1970 Census, there were only .32 violent crimes per 100 persons. In the world of television, therefore, one has between a 30 and 64 percent chance of being involved in violence, but, in the real world, only a one-third of one percent chance.

SPECIFIC AIMS

1. Provide a reliable and detailed picture of the way animals have been presented in television drama since 1969. Special attention will be paid to the portrayal of human-pet/animal relationships.
2. Provide a reliable and detailed picture of the way animals and human-animal relationships are portrayed in a recent sample of television commercials.
3. Determine how these portrayals affect people's conceptions of animals and human-animal relationships. That is, the research will help answer the following questions. What do people learn about animals from television? Do people who watch a lot of television -- with other factors controlled -- have different conceptions of animals and how they should behave?
4. Use findings from the content and cultivation analyses to help expand the University of Pennsylvania's School of Veterinary Medicine's research and training program focusing upon the study of human behavior from the perspective of human-animal relationships.

METHODS OF PROCEDURE

1. Research Plan

The proposed study is divided into four parts:

- (1) Secondary Analysis of Message System Analysis data base to isolate the portrayal of animals in prime-time and weekend daytime dramatic network television programming.
- (2) Development, pilot testing and implementation of a Message System Analysis recording instrument focusing upon the portrayal of animals and human-animal relationships in prime-time and weekend daytime network dramatic programming.
- (3) Development, pilot testing and implementation of a Message System Analysis recording instrument focusing upon the portrayal of animals and human-animal relationships in commercials aired during prime-time and weekend daytime hours.
- (4) Development and implementation of an instrument for Cultivation Analysis focusing upon relevant ideas and behaviors about animals and human-animal relationships that television viewing tends to cultivate.

(1) Secondary Analysis of the Cultural Indicators Project Data Archives

The Cultural Indicators Data Archives consist of two bodies of data -- Message (content) Analysis data (coded observations of "facts of life" in samples of network television drama) and Cultivation Analysis data (responses of adult and child viewers reflecting what they learn from televised "facts of life"). This part of the study will be concerned only with existing Message Analysis data.

Message System Analysis

Message System Analysis is designed to investigate the aggregate and collective premises defining life and its issues in representative samples of mass-produced symbolic material. Such analysis rests on the reliable determination of unambiguously perceived elements of communications. Its data base is not what any individual would select but what an entire national community absorbs. It does not attempt to interpret single or selected units of material, or draw conclusions about artistic merit or ability to "sell" products. The analysis is limited to functions implicit in the prevalence, rate, symbolic structures and distribution of clear and common terms in the samples.²³

The proposed secondary analysis will isolate the portrayal of animals in prime-time and weekend daytime network dramatic television programming. The analysis will use a data base consisting of ten one-week samples²⁴ (1969-1978) of programs aired in the early to mid-fall of

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A description of the analytical framework can be found in "Toward Cultural Indicators: The Analysis of Mass Mediated Public Message Systems" by George Gerbner, in The Analysis of Communication Content: Development in Scientific Theories and Computer Techniques, edited by George Gerbner et. al., New York: John Wiley and Sons, 1969.

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A sample of an entire week of dramatic programming has been demonstrated to be as generalizable to a year's programming as larger randomly selected samples. A sampling experiment, conducted in 1969, found no significant differences between dimensions of program style, format, type and tone across the solid week sample and a sample constructed according to the same time parameters but selected by a one program a day random selection procedure. Michael F. Eleey, "Variations in generalizability resulting from Sampling Characteristics of Content Analysis Data: A Case Study (The Annenberg School of Communications, University of Pennsylvania, 1969). In addition a sampling experiment conducted in the spring of 1977 revealed no significant differences across dimensions of programming (George Gerbner et. al., Journal of Broadcasting, Summer, 1977).

each year, and two (1975 and 1976) one-week samples of programs aired in the early spring of these years. The programs included in these samples were videotaped and subjected to a recording instrument divided into four sections: the program as a whole, the characters, violent actions, and close personal relationships of characters²⁵. An outline and brief description of the recording instrument may be found in Appendix II.

The initial analysis will sketch the general contours of animal activity and behavior in prime-time and weekend daytime network dramatic television programming since 1969. It will present a detailed description of animal characters in this sample of dramatic programming. This analysis will focus upon several aspects of characterization. It will specifically focus upon the portrayal of "humanized" animals -- their portrayal on demographic and descriptive content items and a description of the types of programs in which animals are found.

Reliability of Variables

An important aspect of the Cultural Indicators Message System Analysis is the assessment of the reliability of each item in the recording instrument. The purpose of reliability measures in this type of analysis is to determine the degree to which the data reflect the properties of material under investigation, rather than contamination of instrument ambiguity or observer bias. The measures used in the assessment of reliability for the Cultural Indicators Message System Analysis are agreement coefficients which indicate the degree to which

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Data on character's close personal relationships is available only from 1973.

agreement among independent pairs of observers is above chance²⁶. For most of the variables that will be used in the proposed analysis the acceptable agreement coefficient will be .600. However, for certain items the minimum coefficient may have to be reduced to .500. In all cases where the reduced minimum standard must be used, it will be noted.

- (2) and (3) Development, Pilot Testing and Implementation of a Message System Analysis Recording Instrument focusing upon the portrayal of animals and human-animal relationships in prime-time and weekend daytime network Television Drama and Commercials.

Message System Analysis

This proposal calls for the analysis of dramatic programs in the Cultural Indicators Project videotape archives in which animals appear. This analysis will also be performed upon a sample of commercials. This is the most important and extensive part of the proposed research. The principal aspects of methodology involved in this part of the research are the instrument of analysis, the sample, the training of analysts, the coding procedure, and the assessment of the reliability of the observations.

Recording Instrument Development: Testing and Implementation

An important part of the proposed research is the development and testing of two appropriate recording instruments. The instruments will be developed so as to fully isolate the portrayal of animals and human-animal relationships in both dramatic programming (including

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Please see the discussion of reliability on pages 23-24 of this proposal for a full description of the way reliability is assessed for this project.

weekend daytime programs) and commercials. The same item will be used in both instruments whenever possible.

The instruments will undergo several testing sessions. First, members of the staff will use the recording instrument to code two or three programs and five or six commercials. The staff will meet and discuss all problems encountered in the initial testing period. Second, the recording instrument will be pilot tested on a sample of 25 programs and 30 commercials.

The Sample

The full scale analysis will be conducted on all programs aired from 1969-1978 in the Cultural Indicators videotape archive in which animals appear. Data collected for the dramatic programs will be added to the data originally collected as part of the ongoing Cultural Indicators Project Message System Analysis. The recording instrument for commercials will be used on a sample of commercials (with animals or for pet foods and products) aired during the 1977 and 1978 television seasons.

Coding and Training Procedures

In Message System Analysis coders are trained in a specialized kind of observation. They must reliably make the discriminations required by the recording instrument and record them in a specified form. Coders focus on what is presented in the material and not how it might be judged by a critical viewer. Their task is to generate the data for the subsequent analysis that will permit interpretation of the common message elements and structures available to a public of diverse viewers.

For the full analysis of the samples (dramatic and commercials), a coding staff of between 16 and 20 coders will be recruited. The training

period will require 4 weeks of instruction and testing. An introductory session will be devoted to item-by-item discussion of the recording instrument. The trainee group will be subsequently split into randomly assigned coding teams of two each, and all coder-pairs then will view and code three selected programs that have been viewed and coded by the staff. Each coder-pair will work independently of all other pairs, and will return a joint coding for each program. In the next general meeting, the entire staff will discuss the difficulties encountered in the three program exercise. When these problems have been resolved, the coder-pairs will code an additional seven programs. A similar exercise will be developed to train coders to use the recording instrument for commercials.

The data generated by the coder-pairs on the ten training programs will be keypunched and subjected to computerized analysis. On the basis of these results, instructions and variables will be further discussed and, if necessary, revised. Moreover, idiosyncratic coder-pairs will be isolated. The coder-pairs who survive this testing process will proceed to analyze the sample of programs.

During both the training and data-collection phases, coder-pairs can monitor the assigned videotape of the program or commercials as often as necessary. The entire sample of programs and commercials will be recorded independently by two separate coder-pairs to provide double-coded data for the reliability analysis.

Two final sets of data will be compiled -- one for dramatic programs and one for commercials. The final data sets will be made up of random selection of one of the two codings for programs and commercials. As a last check against deviant coding, and before the final data selection, reliability measures will be computed for each coder-pair. This procedure will help identify problem coder-pairs who may not have been screened out

in the training and pre-test phase. In such an instance, the data recorded by the questionable pair will be excluded from the final selection whenever possible.

Assessment of Reliability

Reliability measures are designed to ascertain the degree to which the recorded data truly reflect the properties of the material being studied and not the contamination of observer bias or of instrument ambiguity. Theoretically both types of contamination are correctable, either by refining the instrument or intensifying coder training; or as a last resort, by eliminating the unsalvageable variable or dismissing the incorrigible coder. Measures of reliability thus serve two functions: as a diagnostic tool in the confirmation of the recording process, and as final evaluators of the accuracy of the phenomena's representation in the actual recorded data. The reliability analysis will be of extreme importance in the pilot testing because the results of this analysis will lead to revisions of the recording instrument.

Five computational formulae are currently available for calculating the coefficients of agreement. The variations are distinguished by a different function, the form of which depends upon the scale type of the particular variable being analyzed. Except for their respective scale-appropriate sensitivity to deviations from perfect agreement, the coefficients make the same basic assumptions as the prototype for nominal scales devised by Scott.²⁷ Thus, in the case of the binary variable, all formulae

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William A. Scott, "Reliability of Content Analysis: The Case of Nominal Scale Coding," Public Opinion Quarterly, 17:3, pp. 321-325, 1955.

yield identical results.²⁸

The reliability of the analysis is thus ascertained by multiple codings and the measured agreement of trained analysts on each item. If one were to substitute the perceptions and impressions of casual observers, no matter how sophisticated, the value of the investigation would be reduced, and its purpose confounded. Only an objective analysis of unambiguous message elements, and their separation from personal impressions left by unidentified clues, can provide the basis for comparisons with audience perceptions, conceptions, and behavior.

(4) Development and Implementation of Cultivation Analysis focusing upon animals

The final phase of the proposed research will involve the development and implementation of a Cultivation Analysis instrument to determine what notions of human-animal relationships may be cultivated by television viewing.

Cultivation Analysis begins with the patterns found in a "world" of television programming (e.g., dramatic programming). The common message systems composing that world present a coherent image of life, people, and society as well as an image of animal and human-animal relationships. How is this image reflected in the images, expectations, definitions, interpretations, and values held by its audiences? Do people see the world as it is presented in television?

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For the derivation of the formulae and discussion of their properties, see Klaus Krippendorff, "A Computer Program for Analyzing Multivariate Agreements, Version 4," Mimeo, Philadelphia: University of Pennsylvania, the Annenberg School of Communications, July, 1973. For a more extended discussion by the same author of part of this family of coefficients, see "Bivariate Agreement Coefficients for the Reliability of Data," in E.F. Borgatta, ed., Sociological Methodology, 1970, San Francisco: Jossey-Bass.

This step of the research will determine what viewers learn about animals and human-animal relationships from the world of television; that is, findings from the content analyses will be turned into questions about conceptions of animals. Each of these questions will have a "television answer" (the way it is in the world of television) and another, different answer (usually the way it really is). For example, we may ask about the prevalence of pets such as dogs and what type of people are likely to have dogs as pets. We may also ask about the nature of human-pet relationships. Finally, this instrument will include cultivation questions, focusing upon how animals are used by people. An important part of the proposed research will be concerned with turning findings about animals and human-animal relationships from the Message System Analysis of dramatic programs and commercials into questions suitable for Cultivation Analysis.

The full implementation of the Cultivation Analysis Instrument will involve giving these questions to adults in a specially commissioned survey. Responses of this sample to the questions will be related to age, television exposure, other media habits, as well as a number of demographic characteristics. The responses of light, medium and heavy television viewers -- with other characteristics held constant -- will indicate what conceptions of social reality the viewing of television tends to cultivate in what groups and to what extent. The analysis will focus specifically upon the response to these questions. We will also be interested in determining whether or not people's conceptions of animals and the nature of human-animal relationships tend to change with age and/or whether or not these conceptions are related to television viewing habits.

This is the general framework in which we propose to carry out the investigation of television's contribution to public conceptions of animals

and human-animal relationships. This research will fill a critical gap in understanding the notions about animals and human-animal relationships that media portrayals may cultivate.

Organization and Management Plan

The project will be implemented by three Co-Principal Investigators (see Application for Vitae and Bibliographies of Co-Principal Investigators). Dr. George Gerbner will have major responsibility for the Message System Analysis phase of the research and Dr. Larry Gross will oversee the research relating to Cultivation Analysis. Dr. Nancy Signorielli will serve as the Project Director (Project Manager) and will be responsible for coordinating the research. She will oversee all data collection, processing and analysis and will supervise the support staff (a graduate student, an Information Systems Technician, Data Control Clerk and Message System Analysis Coders).

The proposed survey of adults will be conducted by a survey research facility such as the National Opinion Research Center (NORC) or the Opinion Research Center (ORC). This decision will be determined in the second year of the project because the interview schedule and sampling plans must be based upon findings from the preceding phases of the project. The final report of the research findings will be written by the Drs. Gerbner, Gross, and Signorielli.

Human Subjects

1. The Sample

The human subjects who will partake in the proposed research will be respondents (18 years of age and older) in a national survey (quota

or probability sample) that will be conducted by a well known survey research company such as the National Opinion Research Center (NORC), University of Chicago or Opinion Research Corporation (ORC), Princeton, New Jersey.

2. Informed Consent

Since an outside organization will be conducting the interviews, consent procedures will be those normally used by the firm when conducting interviews. In all likelihood, consent will be obtained at the time of the interview. The introduction to this section of the interview schedule may begin with the following type of instructions:

"These questions are part of a study to find out what people like you think and believe about a lot of things. If there is a question you do not wish to answer, please tell the interviewer. Most questions do not have a right and wrong answer. If you do not know an answer, just take a guess or use your imagination. Thank you for your help and cooperation."

3. Risks and Benefits

We believe that respondents will not be exposed to any risks in answering the factual questions that will be developed to determine if respondents' ideas and information about animals and human-animal relationships reflect the television world. Furthermore, respondents will be able to refuse to answer any objectional questions. It is also very unlikely that a breach of confidentiality will take place because of the strict procedures we use to insure respondent anonymity.

Since television is such a pervasive medium and plays an important role in the lives of most people, the findings of this research can be used to assess whether or not media portrayals of animals and human-animal relationships are detrimental or beneficial to society. Finally, since some of the questions will focus upon media use, it is possible that

respondents will become more thoughtful about how they use television and other mass media.

Overall, we think that the benefits of these procedures far outweigh the possible risks to respondents.

4. Confidentiality Procedures

Since the data will be collected by an external survey research firm, we will not have access to the names of respondents. Moreover, only identification numbers will be used in our computerized data files. These numbers must be used so that we can easily keep track of each respondent's responses. We do not anticipate that there will be any problems in maintaining the confidentiality of respondents.

SIGNIFICANCE

Culture is that system of messages which cultivates patterns of shared images and, therefore, of social behavior, relationships, and interactions. Enculturation is that critical aspect of socialization which denotes the development of stable images of self and the world, and of how to behave in one's world. The dominant communication agencies produce message systems that cultivate the broadest common notions of what is, what is important, and what is right. They structure the public agenda of existence, priorities, and values. People use this agenda -- some more selectively than others -- to support their ideas and actions. Any significant change in the technology, content, ownership, clientele, outlook, or other institutional characteristics of dominant communication agencies may alter the patterns.

In a folk culture, the production of traditional symbols and figures (representations of gods, chiefs, demons, animals, and men), the conduct of rituals, and the spinning of tales inspire awe and strike terror, as needed, to control the "growing up" process. In mass cultures, institutional policies and manufactured symbolic commodities cultivate norms of conduct.

Mass communication is the extension of institutional public enculturation beyond the limits of face-to-face and any other personally mediated interaction. This becomes possible when technological means are available and social organizations emerge for the mass production and distribution of messages. Mass media are such technological means and social organizations, with television being the most broadly shared and ubiquitous of American mass media.

A long series of private and government commissions, Congressional committees, and foundation-supported studies have, since the 1930's, called for some sort of media surveillance. But none of these proposals spelled out how that might be done, or limited the scope to manageable proportions clearly relevant to scientific purpose and public policy. And, at any rate, none of them was implemented.

Our prior and ongoing studies of violence and aging, supported by the Surgeon General's Scientific Advisory Committee on Television and Social Behavior, the National Institute of Mental Health, the American Medical Association, the Administration on Aging, and other agencies, have established the basis for and have demonstrated the feasibility of this type of research. Social scientists, legislators, and government agencies have called for the development of indicators and profiles of cultural trends relevant to salient issues of social health.

We need to know general trends in the cultivation of assumptions about relationships and human behavior before we can validly interpret specific relevant policies or facts of individual and social response. Interpretations of public opinion (i.e., published responses to questions elicited in specific cultural contexts), and of many media and other cultural policy matters, require indicators similar to the accounts compiled to guide economic decisions and to inform social policy-making.

The most general significance of the proposed research will be, therefore, that of a systematic and reliable surveillance of mass-cultural configurations relating to animals and human-animal relationships and their symbolic functions in our society. Specifically, the research will demonstrate that mass-distributed (televised) dramatic entertainment provides common and ritualistic demonstrations of social relationships, powers, and values that cultivate pervasive public conceptions of social reality, related to mental health and social behavior.

FACILITIES AVAILABLE

The Annenberg School of Communications, University of Pennsylvania, is a graduate school devoted to the training of researchers and scholars in the field of communications. It has the faculty, staff, facilities, and other trained personnel necessary for the guidance and conduct of this study.

Adequate space, computer terminal, videotape equipment, and central facilities, and all other School and University resources for supporting large-scale research projects are available to this study.