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PRO-SOCIAL OBSERVATIONAL LEARNING FROM TELEVISION SOAP OPERA MODELS

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Research on the importance of observational learning has substantially advanced the understanding of human behavior (Bandura, 1973; Friedrich and Stein, 1975). Television provides its viewers with a variety of observational learning experiences. Concern with the effects of TV violence on observational learning provided the impetus for several hundred such studies in the 1960s and in the 1970s. Many of these studies stemmed from the funding and the direction given by the Surgeon General's inquiry into television violence and children's behavior, that resulted in a task force report (Surgeon General's Scientific Advisory Committee on Television and Social Behavior, 1972).

Much past research on observational learning from television is beset with one or more of four methodological problems (Comstock, 1975; Comstock et al. 1978):

1. The subjects have been mainly children, yet the intended population of generalization includes adults.

2. These past studies relied on a single type of dependent variable, measures of aggression.

3. There is a dearth of non-laboratory research designs.

4. The psychological process under study is non-observable.

Comstock et al. (1978) said "We would wish to see research on social learning via television in which a variety of behaviors (both those positively and those negatively valued by society) are permitted to compete as possible outcomes."

The present research attempts to address certain of these methodological concerns just cited. The purpose of the present research is to utilize Bandura's (1977; and 1986) social learning theory to investigate the pro-social effects of "Hum Log", a pro-development television soap opera that was broadcast in India during 1984-85. The present research investigates factors that may predict viewers' learning of pro-social models of behavior from "Hum Log" soap opera models.

LEARNING PRO-SOCIAL BEHAVIOR FROM TELEVISION

Research on pro-social effects of television grew out of recognition that the same principles underlying learning and performance of television-mediated anti-social behavior should operate for more positive behavior (Hearold, 1986). Although there are dissenters (e.g., Murray and Kippex, 1979; and Kaplan and Singer 1976), the general consensus from one perspective is that a positive relationship between viewing violent behavior on television and subsequent aggressive behavior by television viewers (Rubenstein, 1982; Roberts and Bachen, 1982). From another perspective, viewing of violence is associated with the holding by young persons of attitudes and beliefs favorable to the use of violence (Comstock, 1982).

A relatively few studies focus on how the portrayal of a pro-social behavior on television might influence the pro-social behavior among television viewers. Pro-social behavior is behavior that is desirable and beneficial to other individuals and/or to society at large (Rushton, 1982). Measurement of the concept of pro-social behavior involves a value judgement based on the wider social context, a concern acknowledged by several communication scholars (Comstock et al. 1978; Ruston, 1982).

In a review of over three dozen experimental investigations, from both laboratory and naturalistic settings, Rushton (1982) concluded that pro-social television can affect individuals' social behavior in a positive, pro-social direction. Examples of pro-social behavior include helping and sharing behavior in children (Bryan and Walbek, 1970; Rushton and Owen, 1975); resisting temptation and delaying gratification (Staub, 1972; and Yates, 1974); and coping with fears (Bandura and Barab, 1973; and Mann, 1972). Elliot and Vasta (1970), Rushton and Owen (1975), and Collins and Getz (1976) demonstrated that school children learned such pro-social behaviors as donating to charity and sharing candy through observational learning from television models. Coates et al. (1976) and Murray and Ahammer (1977) examined the impact of the extended viewing of a series of pro-social programs among school children. They found increased pro-social behavior as a function of pro-social TV program content. Children easily recognized pro-social themes in entertainment programs (Columbia Broadcasting System, 1977; Silverman, 1977).

"HUM LOG": A PRO-DEVELOPMENT SOAP OPERA

A soap opera is a dramatic serial broadcast mainly intended to entertain. In several Third World countries, a relatively new genre of soap operas have emerged that represent a unique combination of entertainment and education-style programming that some call "enter-education" or "edu-tainment" (although we prefer the more general label of pro-development). A pro-development soap opera is a melodramatic serial that is broadcast in order (1) to entertain, and (2) to convey subtly an educational theme to promote development (Singhal and Rogers, 1988a). Development is defined as "a widely participatory process of social change in a society, intended to bring about both social and material advancement (including greater equality, freedom, and othervalued qualities) for the majority of the people through their gaining control over their environment" (Rogers, 1976, p.133).

The Indian television soap opera, "Hum Log", was inspired by a successful Mexican experience with pro-development soap operas.[2] Between 1975 and 1981, Televisa's Miguel Sabido produced six pro-development soap operas for prime-time television in Mexico. "Ven Conmigo" ("Come with Me"), was one factor in the enrollment of one million illiterates in adult education classes in Mexico in 1975-1976. "Acompáname" ("Come Along with Me"), along with other influences, motivated half a million Mexican men and women to visit family planning clinics in 1976-1977 (Televisa's Institute of Communication Research, 1981).[3]

A content analysis of 149 episodes of "Hum Log" (we could not obtain 7 scripts of the "Hum Log" episodes) indicates that the television series depicted many important social issues confronting Indian society: Family disharmony, unequal status of women, and unsuccessful family planning and health programs. The "Hum Log" episodes were broadcast twice weekly in Hindi, each lasting 22 minutes. An episode was not interrupted by advertisements (which instead were broadcast before, and after, each episode). At the close of each episode, a famous actor in Hindi films, Ashok Kumar,[4] summarized the episode, providing viewers with appropriate guides to action.

"Hum Log" was broadcast on Doordarshan's national network for 17 months between July 7, 1984 and December 17, 1985, a total of 156 episodes. "Hum Log" commanded audience ratings from 65 to 90 percent in North India (which is predominantly Hindi-speaking), and between 20 and 45 percent in the main cities of South India, where most Hindi-language programs are usually rejected by non-Hindi-speaking television viewers (Singhal and Rogers, 1988). An audience of 50 million people watched the average "Hum Log" broadcast in India, out of a national population of 800 million.

Past research on "Hum Log" suggests that viewers indicated strong involvement with the soap opera characters through para-social interaction, defined as the seemingly face-to-face interpersonal relationships between a television viewer and a television performer (Horton and Wohl, 1958). They perceived the program's characters as down-to-earth, they talked to their favorite characters, and they

compared their ideas with those of "Hum Log" characters, and they adjusted their time-schedule to watch "Hum Log" (Singhal and Rogers, in press; Brown, 1988).

Pro-development soap operas are an unusual type of media message, in that their design is based on human communication theories. The designers of the Mexican pro-development soap operas consciously attempted to integrate elements of Bandura's social learning theory, so that television viewers learned the intended behaviors and values from positive and negative models depicted in the television series. In India, incorporation of human communication theories in the design of "Hum Log" was relatively less rigorous than in Mexico, in that the soap opera's designers and scriptwriter followed the general design of the previous Mexican family planning soap opera, "Acompáname", but did not directly seek to incorporate social learning theory.

SOCIAL LEARNING THEORY

Bandura's (1977; 1986) social learning theory is a social psychological theory about the ways in which humans learn social behaviors through observing models. Bandura's theory takes a cognitive viewpoint in accounting for how behaviors, especially new behaviors, are learned. Traditional learning theorists such as Skinner (1957) and Hull (1943) do not assume that an individual's cognitive processes are actively at work, when an individual learns new behaviors through observation. Bandura's (1973) research shows that children can learn behaviors from observing others, and that such observation may be of (1) real life, or (2) of

behavior in films or on television. Bandura claims that real-life models and television models do not differ in influencing the learning of new behaviors. Models presented in televised form are so effective in holding attention that viewers can easily learn a model's behaviors (Bandura, Grusec, and Menlove, 1966).

Bandura (1977; 1986) stressed the distinction between the learning of a behavior, which is dependent on the observation of a model alone, and the subsequent performance of the behavior, which is determined by the expectation of reward or punishment. This expectation includes the observation of what happens to a model following the performance of his or her behavior, which Bandura labels as reinforcement.

Reinforcement is the motivation received by an observer to perform a certain behavior that has been modeled. Bandura believed there are two methods for increasing an observer's motivation for the actual performance of a learned behavior:

1. Direct reinforcement: Offer rewards/punishment to the observer for performance of a modeled behavior.

2. Vicarious reinforcement: Offer rewards/punishment to the models for performance of a behavior.

Research on learning via television modeling is more concerned with vicarious reinforcement (where television models are rewarded/punished for a performed behavior), than with direct reinforcement.

According to Bandura's theory, reward and punishment are more relevant to the performance of a new behavior than just to learning (or acquisition) of a behavior. Bandura's classic (1965) Bobo doll experiment showed that rewarding a television model had a definite facilitative effect on the imitative aggression of viewing children, and lent credibility to the process of vicarious reinforcement, in which an observer responds to the rewards or punishments incurred by a televised actor. The role of reinforcement is primarily to motivate a person to bring forth a learned behavior.

The role of reinforcement in the actual performance of learned pro-social behaviors is an integral part of Bandura's social learning theory, but is not feasible to measure it in the present research, as we do not have any measures of reinforcement received by our "Hum Log" viewers to perform a learned behavior. Here we focus on the learning, or acquisition, of pro-social behaviors from "Hum Log" soap opera models, not the performance of these learned behaviors.

According to Bandura's social learning theory, the cognitive process of learning a behavior first involves (1) an attention stage, and then (2) a retention stage. Once the modeled behavior has been attended to, and retained, then a third stage is motor reproduction in which retained symbols which have been learned are converted into behavioral action. Motor reproduction involves the cognitive organization of individual responses, such as their initiation, monitoring, and refinement on the basis of feedback received on the actual performance of the modeled

behavior. The fourth stage is reinforcement, which (as mentioned previously) Bandura claimed was more relevant to the performance of a behavior, than to the learning of a behavior.

Both the motor reproduction stage and the reinforcement stage involve the actual performance of a modeled behavior on part of an observer. Since it is not feasible in the present research to actually measure the performance of learned behaviors, we focus on an observer's attention and retention processes when learning a modeled behavior.

Learning of new behavior from a model is defined as a viewer's acquisition of new knowledge about a behavior through his/her observation of a model. Learning pro-social behaviors from a model is defined as a viewer's acquisition of new knowledge about a pro-social behavior through his/her observation of a model. For example, when a viewer observes a model who practices family planning, and acquires the knowledge that practicing family planning is a pro-social behavior, then the viewer has learned a pro-social behavior from the model. Notice that learning a certain behavior from a model is not necessarily the same as the actual performance of that behavior (in this case, practicing family planning).

An observer's psychological attraction (1) to the model, and (2) to the modeled behavior, is an important facilitator of the learning process. Features of the modeled behavior regulate the amount and type of attention given by the observer to the model (Bandura 1977, p. 24). Bandura argued that people learn by attending to, and perceiving accurately, the main features of the modeled behavior. If a viewer

perceives the model's behavior as pro-social, then the viewer's learning of that behavior would presumably be in a pro-social direction. A viewer's perception of a model's pro-socialness is the degree to which a viewer perceives the model's behaviors as desirable and beneficial to other individuals and/or to society at large.

HYPOTHESES

Hypothesis 1: Viewers' perceptions of the pro-socialness of television models in "Hum Log" ~~is~~ are positively related to viewers' learning of pro-social behaviors from the televised models in "Hum Log".

The amount of attention received by television models from television viewers is paramount in the learning of modeled behaviors by television viewers (Bandura, 1977). If a viewer does not attend to the television series, and hence the television models, there can be no learning. A viewer's degree of attention to television models is related to the individual's self-reported degree of exposure to the soap opera models.

Hypothesis 2: Viewers' degree of exposure to "Hum Log" is positively related to viewers' learning of pro-social behaviors from the televised models in "Hum Log".

A model's actions can be retained or stored in an observer's memory as verbal symbols and visual imagery. Bandura (1977) said that the retention of visual imagery or verbal symbols can be facilitated by repetition or rehearsal of the modeled behavior. "Hum Log" consisted of 156 episodes, so repetition and rehearsal of a modeled behavior and its

verbal and visual encoding was an ongoing process for the 18 months of television broadcasting in India. To the extent that a model's actions are coded in verbal signals, they are more likely to be remembered at a later time (Bandura, 1977). Careful verbal labeling that summarizes a model's actions is an effective means of coding. Such verbal labeling summarizing the model's actions occurred in "Hum Log" via Ashok Kumar's summary at the end of each "Hum Log" episode.

The retention of the model's actions in verbal symbols is facilitated, if the observer understands the model's verbal symbols or language. One might assume that for a television series broadcast in the Hindi language, retention of the model's actions will be more enhanced for viewers with Hindi language fluency, than for viewers who have less, or no, fluency in the Hindi language. If an observer does not understand the model's language, than their learning of the model's behaviors would be limited.

Hypothesis 3: Viewers' proficiency in Hindi language is positively related to viewers' learning of pro-social behaviors from the televised models in "Hum Log".

Figure 1 shows our theoretical model of viewers' learning pro-social behaviors from the "Hum Log" soap opera models.

"Hum Log" Soap Opera Models

Table 1 lists the 10 main "Hum Log" models, their characterizations, and the percentage of respondent's who said that they learned pro-social

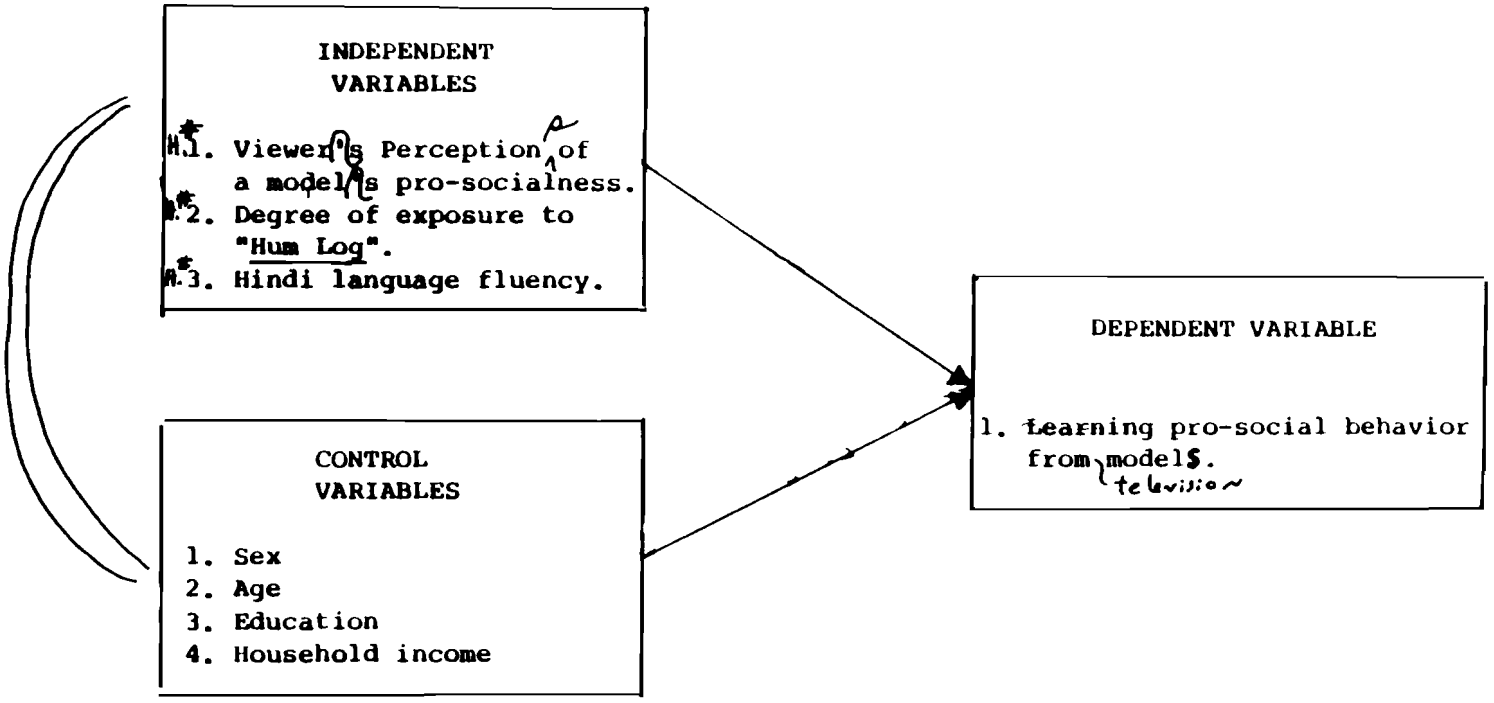

Figure 1. A Theoretical Model ~~to Measure~~ of Learning from "Hum Log" Models.

Table 1. The 10 Main "Hum Log" Soap Opera Models, Their Characterizations, and Degree of Audience Learning About Them.

Family Members	Characterization*	Percentage of Survey Respondents Who Said They Learned Pro-Social Behaviors from this Model. (N = 1,170)
1. Grandfather, Rijjak Ram	A World War II veteran, a strict disciplinarian, self-sufficient, highly moral, and hardworking. A positive role model.	63%
2. Grandmother, Imarti Devi	A beautiful, indulgent person believing in tradition and rituals. She is in poor health and eventually dies of cancer. Somewhat selfish and sarcastic.	42%
3. Father, Basesar Ram	A boorish drunkard who treats his wife and children badly, is superstitious, and continually tries to make a fast buck. A negative male role model.	39%
4. Mother, Bhagwanti	A self-effacing, silent women who looks after the needs of other family members. She suffers at the hands of her husband and mother-in-law. Portrays the stereotype of the traditional Indian wife/mother. A negative role model for gender equality.	53%
5. Eldest son, Lalloo	Lethargic, timid, and stupid to the extent of being hilarious. A failure in life who believes that receiving a dowry will solve his economic problems.	36%
6. Youngest son, Nanhe	A fun-loving sportsman, and a "know-it-all" in wheeling and dealing. A smart, lovable rascal who like his father, wants to get rich quick.	46%
7. Eldest daughter, Badki	Hard-working, brilliant, and proficient in sewing. She is rejected by prospective grooms because her	52%

	parents cannot afford a large dowry, and because she is plain-looking. She works hard, establishes her identity, and later marries a handsome medical doctor. A positive role model for female equality.	
8. Middle daughter, Majhli	Beautiful and glamor-struck. A failure in school, she has loose morals, and a warped sense of modernity. A negative role model.	33%
9. Youngest daughter, Chutki	A studious, no-nonsense, practical girl who hopes to become a medical doctor. Although adopted by a couple of another religion, she lives with her original family. A positive model.	44%
10. Badki's husband, Ashwini.	A handsome medical doctor, who respects his wife, and cares for her family.	42%

* These descriptions are based on the character profiles prepared by scriptwriter, Manohar Shyam Joshi, while designing "Hum Log" (Joshi, 1984). Our content analysis of the scripts of 149 "Hum Log" episodes supports the fact that Joshi designed the "Hum Log" characters based on his initial character profiles.

behaviors from these models. We test our three hypotheses on which our overall theoretical model for viewers' pro-social learning from the "Hum Log" soap opera models is based with aggregate data about all modeled characters. Additionally, we disaggregate our data to test the degree of viewers' learning of pro-social behaviors from each of the "Hum Log" models. This disaggregated test of viewers' learning from each of the "Hum Log" model can be viewed as a further test of our three hypotheses.

METHOD

Procedures

We conducted an audience survey of 1,170 adult respondents residing in three areas: (1) in and around Delhi (N=599), a Hindi-speaking area in North India, (2) in and around Pune (N=332), a Marathi-speaking area in Western India, near Bombay, and (3) in and around Madras (N=239), a Tamil-speaking area in South India.[5] About 83 percent of our total sample resided in urban areas, and 17 percent in rural areas (we oversampled in urban areas because 75 percent of all TV sets in India are located in urban areas). The audience survey was conducted in the summer of 1987, about 18 months after the last screening of the "Hum Log" television series. The time-gap between exposure and measurement represents a challenge to our search for audience effects.

The audience survey was conducted by trained interviewers who individually contacted respondents and recorded their answers on printed questionnaire. The questionnaire included questions about the

respondents' demographic characteristics, their level of mass media exposure and participation, their degree of exposure to "Hum Log", their perception of the pro-socialness of the "Hum Log" soap opera models, their learning of pro-social behaviors from the "Hum Log" models, and so forth.

Measures

Independent Variables

1. Viewers' perception of a model's pro-socialness was previously defined as the degree to which a viewer perceives the model's behaviors as socially desirable and beneficial to other individuals and/or to society at large.

Five sets of questions in our survey questionnaire measured viewers' perceptions of the pro-socialness of each of the 10 "Hum Log" models. Examples are such statements as, "Do you perceive Grandfather to be virtuous or non-virtuous?", "Do you perceive Grandfather to be polite or impolite?", and so on. Responses were coded as "pro-social" or "not pro-social". The five set of perception questions were asked for each of the ten main "Hum Log" soap opera characters.

2. Viewers' degree of exposure to "Hum Log" was measured by asking respondents: "How many "Hum Log" episodes did you watch"? Responses were recorded as (1) none, (2) some, or (3) most/all.

3. Viewers' proficiency in Hindi language was measured by asking our respondents: "What is your level of Hindi language fluency?" Responses were recorded as (1) none at all, (2) somewhat, or (3) a lot.

Dependent Variable

Learning pro-social behaviors from models was previously defined as the viewers' acquisition of new knowledge about a pro-social behavior through their observation of television models. One set of questions dealt with learning pro-social behaviors from the 10 "Hum Log" soap opera models. Respondents were asked: "Did you learn pro-social models of behavior from Grandfather"? There were 10 such items, one for each of the ten main characters in the "Hum Log" family. Answers were coded as "yes" or "no".

Control Variables

To control for demographic, gender, and socio-economic status characteristics, four control variables were included in our regression model: respondents' sex, age, education, and monthly household income.

The topic of a message can be expected to elicit different attitudes from men and women (Eagly, 1978; Bettinghaus and Cody, 1987, p. 70). "Hum Log" dealt with issues such as the status of women, family harmony, and family planning, topics in which Indian men and women are most likely to have difference in opinions and attitudes. Attitude and behavior differences are also likely to go together with differences in age. For example, children may be more open to learning new behaviors than the old. There are important differences in attitudes and beliefs of people who who

belong to different social classes (Bettinghaus and Cody, 1987). Level of education and household income are key variables which determine a person's social class. Monthly household income is related to TV ownership in India (Singhal, Doshi, Rogers, and Rahman, 1988), and thus has a bearing on who was exposed to "Hum Log". We controlled for such demographic, gender, and socio-economic characteristic as sex, age, education, and monthly household income while testing the relationship between our three independent variables and our learning dependent variable.

Decision Rule

The decision rules used to test our three hypotheses were:

1. The partial beta coefficients linking each independent variable to our dependent variable should be significantly different from zero at the 5 percent level, while controlling on the effects of other independent and control variables.

2. Partial beta coefficients must be in the same direction as the hypothesized relationship.

To test our overall theoretical model for viewers' pro-social learning from the 10 "Hum Log" soap opera models, we needed (1) a composite scaled measure of our 10 pro-social learning variables, one for each "Hum Log" model, and (2) a composite scaled measure of our 50 variables relating to viewers' perceptions about the models' pro-socialness, five for each "Hum Log" model.

Factor analytic techniques were utilized to condense (summarize) the information contained in a large number of original variables into a smaller set of new composite dimensions (factors) with a minimum loss of information. Among factor analytic techniques, principal components analysis was used because the objective was to summarize most of the original information (variance) in a minimum number of factors for prediction purposes (Hair, Anderson, and Tatham, 1987). Since, the new smaller set of variables (factors) was used in subsequent multiple regression analysis, factor-weighted scores, a composite measure of all original variables that were important in making the new factor, were included to represent the newly derived variables.

An unrotated principal components analysis was performed on the 10 pro-social learning variables. Unrotated principal components solutions were used to extract factors in the order of their importance. The first factor tends to be a general factor with almost every variable loading significantly, and it accounts for the largest amount of variance (Hair, Anderson, and Tatham, 1987). No rotation was necessary, or possible, because the analysis included variables loading on a single dimension. Factor-weighted scores were computed for each respondent to construct a composite scaled measure of our dependent variable ~~on~~ (pro-social learning). The principal component factor loadings for learning pro-social models of behavior from all 10 "Hum Log" characters are presented in Table 2, along with the percentage of variance in the 10 variables accounted for by this solution, and theta, ~~Theta is~~ a reliability coefficient designed for principal components scales. Given

Table 2. First Principal Components Factor Loadings and Reliability of Scale for Learning Pro-Social Models of Behavior from ~~All~~ (10) Ten Main "Hum Log" Characters.

Variables	Factor 1
1. Learning from Grandfather	.74
2. Learning from Grandmother	.80
3. Learning from Basesar Ram	.74
4. Learning from Bhagwanti	.77
5. Learning from Lalloo	.81
6. Learning from Nanhe	.84
7. Learning from Badki	.80
8. Learning from Majhli	.82
9. Learning from Chutki	.84
10. Learning from Ashwini	.81
% Variance Explained	= 62
Reliability (theta)	= .93

the weighting of principal components, theta can be interpreted as a maximized Chronbach's alpha (Carmines and Zeller, 1979). Theta for our principal components scale on pro-social learning is 0.93 (Table 2).

A varimax rotated principal components analysis was performed on our 50 variables related to viewers' perceptions about the pro-socialness of all 10 "Hum Log" soap opera models. The varimax solution provides 13 factors, which 10 clean factor structures correspond to each of the 10 "Hum Log" characters. In essence, there was one clean factor dimension for each of the 10 main "Hum Log" characters. This factor analytic solution suggests that our survey respondents clearly recalled perceived pro-social qualities of each of our 10 "Hum Log" soap opera characters (even 18 months after the final broadcast of "Hum Log"). Results of this varimax rotated solution are presented in Table 3.

An unrotated principal components analysis was then conducted all 50 variables related to viewers' perceptions about the pro-socialness of all 10 Hum Log" soap opera models. Factor-weighted scores on the first principal component were computed for each respondent and used as a composite scaled measure of our independent variable, viewers' perceptions of models' pro-socialness. The first principal component factor loadings for viewers' perceptions about the pro-socialness of all 10 "Hum Log" models are presented in Table 4, along with the percentage of variance in the 50 variables accounted for by this solution. Theta for our principal components scale on viewers' perceptions of models' pro-socialness is 0.90.

[redacted]

Table 3. Varimax Rotated Factor Matrix for the 50 Variables ~~Relating to~~ Representing Viewers' Perceptions About the Pro-socialness of All 10 "Hum Log" Models.

[redacted]

ROTATED FACTOR MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8
V130	.08282	.15811	-.00124	-.06587	.19880	.46472	-.04569	.14625
V131	.08478	.05204	.05015	.01514	.08208	.05220	.10499	.08440
V132	.00147	-.01513	.02087	.09880	.02934	-.12027	-.08293	.04985
V133	.10497	.03131	.01346	-.04663	.06121	.04445	.07438	.02112
V135	.03644	-.00091	-.04052	.48105	-.00534	.03313	-.06632	.03424
V136	.77823	.05306	.10263	.07392	.17071	.10151	.07699	.03913
V137 GRANDMOTHER	.82290	.13187	.14599	.05112	.08956	.01678	.07424	.04300
V138	.81221	.12123	.08619	-.00650	.00216	.02076	.11214	.10697
V139	.75256	.17993	.13908	-.08150	-.03098	.01616	.11676	.07058
V141	.74236	.10287	.17273	.21443	-.06151	-.04263	.00687	-.01987
V142	.11442	.13592	.70740 BASESAR	-.01807	.08627	.06689	.06394	.03751
V143	.09779	.17192	.79866 RAM	-.01661	.02621	.02734	.05307	.00055
V144	.09677	.14498	.80766	-.00341	.00648	-.04064	.02170	-.01593
V145	.11912	.14735	.78910	-.05509	-.04658	.03630	.08881	.06066
V147	.13683	.12461	.76485	.07158	-.05165	.07263	.02389	-.03835
V148	.07142	.02530	.05142	.06154	.53334	.58888	.05252	.07185
V149	.02380	-.01262	.04263	.08130	.31678 BHAGWANT	.65793	.05531	.01836
V150	.04859	-.01611	.00570	.12508	.15892	.61891	.04162	.07163
V151	.00919	-.00315	-.00338	.09082	-.06177	.73052	.01914	.05693
V153	-.02233	-.03292	-.06201	.44970	-.08078	.55547	.01652	-.03789
V154	.32584	.13468	.06095	.01443	.28336	-.01098	.60474	.10900
V155	.05268	.09225	.04434	.01296	.18521	.04376 LALLOO	.75005	.09389
V156	.25977	.24228	.11882	.05850	.07390	.00265	.67172	.11547
V157	-.04689	.13165	.08453	.00778	-.13338	.12936	.75394	.08688
V159	.08844	.07965	.07792	.47343	-.02812	-.02981	.62371	-.00877
V160	.16950	.06227	.02812	.03647	.60505	-.01556	.15293	.51061
V161	.09951	.08972	-.00241	.17880	.25424	.04969	.06448	.68488
V162	.11900	.06566	.04439	.14636	.08830	.03819	.15488 NANHE	.72292
V163	.00538	.10749	.00197	.03872	.00460	.17255	.11756	.64297
V165	.03774	.02847	.02777	.73823	.01374	.01553	.08434	.38279
V166	-.05629	.04663	-.00595	.13536	.65313	.18858	-.00072	-.01709
V167	.14150	.15324	.06737	.15066	.18540	.14922	.09040	.15518
V168	-.07811	.04572	-.06002	.11341	.24382	.33289	.04999	.01530
V169	.12581	.17129	.07567	-.04600	.08008	.11482	.13848	.17622
V171	.02378	.07802	-.02871	.69474	.14900	.14959	.01443	-.05337
V172	.09798 MAJHLI	.73590	.13307	.02704	.22284	-.06091	.04914	-.00377
V173	.12240	.80753	.23468	.02782	.05418	.01081	.08705	.03675

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- F A C T O R A N A L Y S I S -

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8
V174	.14967	.79623	.19704	-.01999	-.00484	-.01493	.15842	.06509
V175	.13962	.72459	.12910	-.03086	-.02488	.14504	.17437	.09088
V177	.11993	.74212	.20325	.26178	-.00176	-.03666	.07260	.07542
V178	.08534	.09337	-.02134	.11972	.72462	.04830	.10229	.11011
V179	.03233	.02986	.01662	.17052	.53975	.15399	.04494	.06351
V180	.14093	.09145	-.01047	-.00673	.26906	.15324	.17520	.16142
V181	.10080	.08369	-.03772	.07185	.14590	.31987	.11976	.19709
V183	.09983	.01865	.02213	.77778	.16556	.16369	.09214	.07591
V184	.02221	.10016	.01668	.00306	.51796	.13792	.06882	.19835
V185	.07581	.08809	.03510	.12232	.34016	.08047	.11429	.10532
V186	.01325	.04195	-.04601	.05123	.18507	.18008	.15818	.14399
V187	.06981	.05394	.02768	.14221	.05649	.30977	.10806	.12560
V189	.06597	.07584	-.03670	.73563	.06341	.04350	.04253	.05496

MAJHLI

	FACTOR 9	FACTOR 10	FACTOR 11	FACTOR 12	FACTOR 13
V130	.42008	.06597	.00723	-.20636	-.29156
V131	.72213	.20780	.05495	-.00457	-.04276
V132	.61656	-.25031	.38367	.01621	.16765
V133	.75339	.16768	.00677	.03161	.06069
V135	.42759	-.27081	-.10984	.13914	.30856
V136	.05757	.04147	-.03810	-.10612	-.08209
V137	.05095	.08264	.06273	.08734	-.00544
V138	.05326	-.05383	.11152	.04327	.04529
V139	.13990	.13233	-.02191	.11257	.15293
V141	-.02942	-.04733	-.04235	.11698	.01886
V142	-.00014	-.04481	-.02294	-.04622	-.03065
V143	.03811	.04508	-.06081	.07552	.08085
V144	.02199	.00263	.09693	-.02421	-.02453
V145	.06072	.08020	-.00785	.07458	.07034
V147	-.04765	-.03988	-.03646	.04884	-.10336
V148	-.03733	.03648	.04391	-.10568	-.02836
V149	-.10305	.15146	.09694	.13995	.14614
V150	.18607	.10012	.38844	.01471	.09126
V151	-.03889	.16697	.08649	.12464	.13378
V153	.11638	-.09398	-.14404	.20572	.02576
V154	-.01391	-.11306	-.02228	.12573	-.14051
V155	.04341	.11515	-.00208	.12200	.14870
V156	.05048	.05305	.23442	.13235	-.11253
V157	.10417	.18773	.02180	-.01479	.27724
V159	-.02520	.02211	.09924	-.07402	-.11019
V160	.01535	-.06484	-.02233	.16075	-.06534
V161	.00475	.14878	-.02406	.13568	.10685
V162	.06075	.04924	.38311	.13474	-.09014
V163	.25452	.18345	-.02026	.06529	.34883
V165	-.05563	.01250	.11089	-.01468	-.05109
V166	.14315	.23471	.07813	.22822	-.01301

GRANDFATHER

BADKI

CONTINUED ON NEXT PAGE

F A C T O R   A N A L Y S I S

	FACTOR 9	FACTOR 10	FACTOR 11	FACTOR 12	FACTOR 13
V167	-.04447	.08268	.16335	.69900	.00130
V168	.10688	.16885	.59046	BADKI .24465	-.05834
V169	.06501	.14256	.05353	.74089	.04893
V171	.07513	.06119	.01823	.17434	.10109
V172	.07458	.07516	-.02658	.03080	.00368
V173	-.00034	.01352	-.01163	.13329	.01672
V174	.03571	.07592	.24076	.07735	.00234
V175	.08688	.10390	-.03942	.02028	.16162
V177	-.06556	-.09474	.00287	.06951	-.08638
V178	.07183	.03210	.21928	.00132	.15950
V179	.00504	.18183	.18768	-.02567	CHUTKI .47735
V180	.09010	.11088	.60030	.01439	.33295
V181	.13040	.23091	.12049	.03970	.63812
V183	-.01834	-.03616	.12391	-.10444	.09836
V184	.12730	.45957	.08849	.10367	-.09471
V185	.13600	.62171	.13537	.13109	.14497
V186	.13481	ASHWINI .48759	.50406	.13032	-.00399
V187	.14091	.67558	.06815	.09137	.24337
V189	-.03790	.30809	-.03759	-.00816	-.06321

FACTOR TRANSFORMATION MATRIX:

	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8
FACTOR 1	.33749	.34471	.20943	.26612	.37002	.30334	.32146	.29506
FACTOR 2	.39712	.41402	.55737	-.18235	-.27045	-.35582	.11015	-.10061
FACTOR 3	.17765	-.08130	-.11752	.87778	-.18340	-.06570	.03124	.00191
FACTOR 4	-.71511	.32183	.45584	.22923	-.04031	.22935	-.08596	-.14100
FACTOR 5	.32813	-.31287	.40105	.04618	.02793	.44231	-.56623	-.23671
FACTOR 6	-.13927	-.12091	-.04256	.10651	-.52225	-.07593	.05448	.01595
FACTOR 7	-.05228	.44140	-.18071	.09043	.38425	-.30623	-.61201	.15877
FACTOR 8	-.20008	-.50909	.47367	.10033	.26786	-.42470	.11603	.34705
FACTOR 9	-.01930	.09546	-.05923	.06260	.34913	.04674	.33090	-.55499
FACTOR 10	-.04240	-.06687	.00787	-.03932	-.19846	.18430	.04972	-.07293
FACTOR 11	-.07710	.07985	-.02283	-.17782	.00560	.45822	.13338	.50765
FACTOR 12	-.05238	-.08652	-.00868	.04399	.02591	.02443	.08200	.01377
FACTOR 13	-.06909	-.07499	.00570	-.04639	.31587	-.04684	.16758	-.33130

	FACTOR 9	FACTOR 10	FACTOR 11	FACTOR 12	FACTOR 13
FACTOR 1	.19142	.27152	.23796	.20807	.15162
FACTOR 2	-.10030	-.20111	-.18177	-.01713	-.14534
FACTOR 3	-.18761	-.26913	-.15854	-.03087	-.06990
FACTOR 4	-.18791	.07666	-.02507	.03129	.02063

Table 4. First Principal Components Factor Loadings and Reliability of Scales for (1) Viewers' Perception of Pro-Socialness About All (10) "Hum Log" Models, and (2) Each of the "Hum Log" Models.

Variables	Factor 1 (Aggregate Data Over All Characters)	Factor 1 (Disaggregate Data Over Individual Characters)
Grandfather		
1. Virtuosness	.28	.70
2. Obedience	.36	.74
3. Responsibility	.18	.80
4. Politeness	.33	.79
5. Selflessness	.16	.62
	% Variance Explained = 54	
	Reliability = .79	
Grandmother		
6. Virtuosness	.39	.79
7. Obedience	.48	.86
8. Responsibility	.42	.84
9. Politeness	.44	.81
10. Selflessness	.30	.77
	% Variance Explained = 67	
	Reliability = .87	
Basesar Ram		
11. Virtuosness	.21	.74
12. Obedience	.27	.82
13. Responsibility	.22	.81
14. Politeness	.30	.82
15. Selflessness	.17	.78
	% Variance Explained = 63	
	Reliability = .83	
Bhagwanti		
16. Virtuosness	.41	.71
17. Obedience	.44	.82
18. Responsibility	.44	.74
19. Politeness	.30	.72

20. Selflessness	.23	.65
	% Variance Explained	= 53
	Reliability	= .77
Lalloo		
21. Virtuosness	.47	.70
22. Obedience	.48	.78
23. Responsibility	.56	.79
24. Politeness	.40	.75
25. Selflessness	.36	.68
	% Variance Explained	= 55
	Reliability	= .78
Nanbe		
26. Virtuosness	.49	.69
27. Obedience	.50	.78
28. Responsibility	.52	.78
29. Politeness	.47	.72
30. Selflessness	.36	.60
	% Variance Explained	= 52
	Reliability	= .75
Badki		
31. Virtuosness	.44	.64
32. Obedience	.50	.73
33. Responsibility	.42	.74
34. Politeness	.45	.66
35. Selflessness	.35	.54
	% Variance Explained	= 46
	Reliability	= .68
Majhli		
36. Virtuosness	.42	.76
37. Obedience	.44	.86
38. Responsibility	.51	.86
39. Politeness	.48	.78
40. Selflessness	.38	.80

		% Variance = 66 Explained
		Reliability = .87
Chutki		
41. Virtuosness	.50	.70
42. Obedience	.50	.79
43. Responsibility	.56	.79
44. Politeness	.53	.74
45. Selflessness	.41	.56
		% Variance = 52 Explained
		Reliability = .77
Ashwini		
46. Virtuosness	.48	.69
47. Obedience	.56	.79
48. Responsibility	.53	.77
49. Politeness	.52	.75
50. Selflessness	.32	.45
% Variance Explained = 18		% Variance = 49 Explained
Reliability = .90 of Overall Perception Scale		Reliability = .73

Our 10 disaggregated analyses to measure viewers' pro-social learning from each of the "Hum Log" soap opera models required a composite scaled measure of the 5 variables relating to the perception of an individual model's pro-socialness. An unrotated principal components analysis was performed on the 5 variables relating to the perception of a model's pro-socialness, separately for each of the 10 "Hum Log" models. In all 10 analyses, no rotation was necessary, or possible, because all 10 analyses included variables loading on a single dimension. Factor-weighted scores of the first principal components scale were computed in all 10 factor solutions for use as our perception independent variable in estimating the degree of pro-social behavior learned from each model.

The principal component factor loadings for viewers' perceptions of a model's pro-socialness, for each "Hum Log" model separately, are presented in Table 4, alongside the first principal components factor loadings for viewers' perceptions of the pro-socialness of all 10 "Hum Log" models. Table 4 also presents the percentage of variance explained in the 5 variables relating to viewers' perceptions of a model's pro-socialness, for each "Hum Log" model, and the corresponding values of scale reliability coefficient theta. Theta varies from 0.68 in the case of Badki, to 0.87 in the case of both Majhli and Grandmother.

RESULTS

Table 5 shows the zero-order correlations among all the variables in our multiple regression model. Table 6 shows the partial beta coefficients of each independent and each control variable with the learning of

Table 5. Zero-Order Correlation Matrix of Variables in Our Multiple Regression Model.

	Pro-social Learning	Perception of Model	Exposure	Hindi Fluency	Sex	Age	Education	Family Income
Pro-social Learning	1.00							
Perception of Model	.12	1.00						
Exposure	.34	.07	1.00					
Hindi Fluency	.24	.18	.50	1.00				
Sex	.03	-.11	-.18	-.04	1.00			
Age	-.10	.02	-.03	-.09	.06	1.00		
Education	.06	-.11	.16	.08	.23	-.05	1.00	
Family Income	-.02	-.13	.21	.13	.01	.12	.37	1.00

Table 6. Partial Beta Coefficients for the Relationships of Each Independent and Control Variable With the Dependent Variable, Pro-Social Learning From (1) All 10 "Hum Log" Soap Opera Models, and (2) Each "Hum Log" Model, While Controlling on All Other Such Variables.

Dependent Variable	Independent Variables			Control Variables					
Pro-Social Learning	Perception of Model→	Exposure	Hindi Fluency	Sex	Age	Education	Family Income	R^2	F-Statistic
All Models	.10*	.43*	.11*	.20*	-.04*	.02	-.04*	.15	28.9**
Grandfather	.004	.19*	.05*	.12*	-.006	.02	-.02	.11	11.3**
Grandmother	.10*	.17*	.01	.06	-.002	.06	-.02*	.12	12.3**
Basesar Ram	.08*	.16*	.04	.12*	-.012	-.01	-.01	.11	11.8**
Bhagwanti	-.01	.18*	.03	-.05	-.003	-.01	-.02	.09	9.4**
Lalloo	.09*	.15*	.02	.12*	-.006	.002	-.01	.11	11.3**
Nanhe	.02	.19*	.01	.06*	-.03*	.01	-.02*	.11	11.4**
Badki	.03*	.15*	.04	-.03	-.02*	-.03*	-.02*	.10	10.2**
Majhli	.10*	.11*	.05*	.05	-.01*	.002	-.01	.13	13.7**
Chutki	.01	.13*	.05*	.001	-.02*	.02	-.02*	.07	7.8**
Ashwini	-.01	.18*	.02	.08*	-.02*	.01	-.02*	.11	11.1**

* Indicates a beta coefficient that is significantly different from zero at the 5 percent level of significance.

** Indicates an F-statistic that is significant at $p \leq .0001$ level.

pro-social behaviors from the "Hum Log" soap opera models. Our three hypotheses, presented previously, are:

Hypothesis 1: Viewers' perceptions of the pro-socialness of television models in "Hum Log" is positively related to viewers' learning of pro-social behaviors from the televised models in "Hum Log".

The partial beta coefficient for viewers' perceptions of the pro-socialness of "Hum Log" models, while controlling for viewers' (1) exposure to Hum Log", (2) Hindi language fluency, (3) sex, (4) age, (5) education, and (6) household income, is .10, which is significantly different from zero at the 5 percent level. The partial beta coefficient is consistent with the direction of the hypothesized relationship. Thus Hypothesis 1 is supported.

Hypothesis 2: Viewers' degree of exposure to "Hum Log" is positively related to viewers' learning of pro-social behaviors from the televised models in "Hum Log".

The partial beta coefficient for viewers' exposure to "Hum Log", while controlling for viewers' (1) perceptions of models' pro-socialness, (2) Hindi language fluency, (3) sex, (4) age, (5) education, and (6) household income, is .43, which is significantly different from zero at the 5 percent level. The partial beta coefficient is consistent with the direction of the hypothesized relationship. Thus Hypothesis 2 is supported.

Hypothesis 3: Viewers' proficiency in Hindi language is positively related to viewers' learning of pro-social behaviors from the televised models in "Hum Log".

The partial beta coefficient for viewers' Hindi language fluency, while controlling for viewers' (1) perceptions of models' pro-socialness, (2) exposure to "Hum Log", (3) sex, (4) age, (5) education, and (6) household income, is .43, which is significantly different from zero at the 5 percent level. The partial beta coefficient is consistent with the direction of the hypothesized relationship. Hypothesis 3 is supported.

In addition, we found that viewers' learning of pro-social behaviors from "Hum Log" soap opera models was related to such control variables such as sex (beta=.20, $p<.05$), age (beta=-.04, $p<.05$), and respondent's monthly household income (beta=-.04, $p<.05$). The negative coefficient associated with age indicates that younger respondents learned more pro-social behaviors from "Hum Log" soap opera models than older viewers did. The negative coefficient associated with monthly household income indicates that respondents belonging to households with low monthly incomes learned more pro-social behaviors from "Hum Log" soap opera models than respondents from households with higher monthly incomes.

The amount of variance in the dependent variable of pro-social learning from "Hum Log" models explained by our multiple regression model is 15 per cent.[6]

Learning from Individual "Hum Log" Models

Table 5 shows the results of our multiple regression models to measure pro-social learning from each of the 10 main "Hum Log" models. These 10 disaggregated multiple regression analysis are a further test of our three hypotheses. Results about pro-social learning from individual "Hum Log" models are consistent with our previously-stated results about the overall pro-social learning from all 10 "Hum Log" models combined. For each of the ten "Hum Log" models, the partial beta coefficients for viewers' exposure to "Hum Log" with his/her pro-social learning from the "Hum Log" model, while controlling on all other independent and control variables, is significantly different from zero at the 5 percent level.

The partial beta coefficient for viewers' perceptions concerning a model's pro-socialness with their pro-social learning from that "Hum Log" model, while controlling on all other independent and control variables, is significantly different from zero at the 5 percent level for five of of 10 "Hum Log" models Grandmother, Basesar Ram, Lallu, Badki, and Majhli.

The partial beta coefficient for the relationship of viewers' Hindi language fluency with their pro-social learning from the "Hum Log" model, while controlling on all other independent and control variables, is significantly different from zero at the 5 percent level for 3 of the 10 "Hum Log" models: Grandfather, Majhli, and Chutki.

The variance explained in our dependent variable of learning pro-social models from individual "Hum Log" characters by these (10) multiple regression models ranged from 7 percent in the case of the character of Chutki, to 13 percent in the case of the character of Majhli.

The partial beta coefficient for the relationship of sex, while controlling on all other independent and control variables, is significant related to viewers' pro-social learning from five "Hum Log" characters: Grandfather, Basesar Ram, Lallu, Nanhe, and Ashwini (all male models). Our results suggest that male viewers learned more pro-social models of behavior from male TV models.

The partial beta coefficient for the relationship of age, while controlling for all other independent and control variables, is significantly (and negatively) related to viewers' pro-social learning from five "Hum Log" characters: Nanhe, Badki, Majhli, Chutki, and Ashwini, all ~~from~~ among the youngest generation in the three-generation "Hum Log" family. This result suggests that younger viewers learned more pro-social models of behavior from younger TV models.

The partial beta coefficient for the relationship of family household income, while controlling on other independent and control variables, is ~~a~~ significantly (and negatively) related of viewer's pro-social learning from five "Hum Log" characters: Grandmother, Lallu, Nanhe, Chutki, and Ashwini. This result suggests that viewers' from families with low monthly household incomes learned more pro-social behaviors than those earning higher household incomes.

DISCUSSION

We found support for three hypotheses:

1. Viewers' perceptions of the pro-socialness of television models in "Hum Log" is positively related to viewers' learning of pro-social behaviors from the televised models in "Hum Log". Viewers' learned pro-social behaviors from those characters whom they perceived as pro-social, and not from those whom they did not perceive as pro-social.

2. Viewers' degree of exposure to "Hum Log" is positively related to viewers' learning of pro-social behaviors from the televised models in "Hum Log".

3. Viewers' proficiency in the Hindi language is positively related to viewers' learning of pro-social behaviors from the televised models.

In addition, we found that male viewers learned more pro-social behaviors from male "Hum Log" models, younger viewers learned more pro-social behaviors from younger "Hum Log" models, and viewers with low monthly household incomes learned more pro-social behaviors from "Hum Log" models, which makes sense given that the "Hum Log" television family was a low-income family. The relationship between viewer's education and their pro-social learning from the soap opera models was not significantly different from zero.

How could gender differences explain the differences found in learning pro-social models of behavior between men and women? A number of the

physical differences between men and women are obvious and universal. The psychological differences are not (Maccoby and Jacklin, 1974). Caution must be exercised in making any judgements about the greater persuasibility of any demographic group ~~to learn more~~. In a comprehensive review of gender differences and persuasibility, Eagly (1978) found that depending on the topic of the message, one can expect different attitudes from men and women. In a male-dominated society like India, "Hum Log's" topic, which stressed pro-social messages about a more equal status for women, and the need for family planning, seems biased in favor of women, in the sense that women's position in ~~the~~ society needs to be more highly valued by men. Our present research suggests that men learned more pro-social behaviors from "Hum Log" models than did women, for example, to provide women with a more equal status, and/or to be more responsible in planning a family. So perhaps it was the nature of the "Hum Log's" topic, which influenced men to learn more pro-social models of behavior than did women.

Most empirical studies on of mass media effects show that the mass media have only a limited effect in influencing viewers' attitudes and behaviors. In a comprehensive review of the mass media effects literature, McGuire (1986, p. 177) argued that few studies show overall effects sizable enough to reach statistical significance. Even the significant findings have a small effect size, usually accounting for only 2 to 3 percent of the variance in the dependent variable.

Our independent and control variables explained 15 percent of the variance in our pro-social learning dependent variable. Our findings

about viewers' learning from television soap opera models fit well with past research and theory on social learning, and on mass media effects. Our results show that television has the potential to produce pro-social effects among its viewers. Our present research suggests that television models can help viewers learn certain pro-social behaviors if (1) the model is perceived as pro-social by the viewer, (2) the viewer is more exposed to the model, (3) the viewer can understand the models' language, and thus decode the learned symbols in verbal imagery, and (4) if the model exhibits certain characteristics that the viewer also possesses. Our research suggests answers to such questions as: Given a variety of models, who would a viewer be more likely to model? How does the age, sex, and other personal characteristics of a television model influence viewers' modeling of a learned behavior?

In the past, Bandura's social learning theory has been primarily used to demonstrate observational learning (1) among children, (2) in laboratory settings, and (3) with aggression measures as the dependent variables. Our research on "Hum Log" demonstrates the potential of utilizing Bandura's social learning theory for (1) larger populations, (2) in natural field settings, and (3) with pro-social learning measures as dependent variables.

There are certain research implications of our modest evidence in support of Bandura's social learning theory. Further research utilizing Bandura's social learning theory needs to be done on observational learning from television in large populations in natural field settings,

and with pro-social dependent measures. Pro-development television soap operas offers researchers an unusual opportunity to test and refine Bandura's social learning theory in such settings.

Research literature on the incorporation of Bandura's social learning theory in the design of pro-social television programs is virtually non-existent. Almost all research attempts related to Bandura's social learning theory have been to test or modify the theory. We need to better understand the incorporation of social learning theory in designing pro-social television programs, as happened in the Mexican TV soap operas (Bandura, 1986), and to a certain extent in "Hum Log".

Limitations of the Present Research

The present research is limited by its reliance on ex-post facto data. Despite the 18 months' time-gap between our data-collection activities and the final broadcast of the "Hum Log" program, our survey respondents easily recalled details about the "Hum Log" television episodes. Our factor analytic solution of the 50 variables relating to the viewers' perceptions about the pro-socialness of all 10 "Hum Log" models suggests that our survey respondents clearly recalled perceived pro-social qualities of each of our 10 "Hum Log" soap opera characters. Possible reasons for this high degree of recall about "Hum Log" by our survey respondents include: (1) the great popularity of "Hum Log" with its audiences, (2) the high degree of ~~tremendous~~ viewer involvement with "Hum Log" characters, (3) the relatively low level of clutter experienced by Indian television viewers because only one network television channel exists,

and (3) The relatively low media program diversity on Indian television ~~present~~ due to the limited number of broadcast hours.

While recall may not have been a major problem for the present research, small wording changes in survey questions can have a large effect on the responses. The same questions can take on different meanings when asked in different contexts, and even the same questions asked in the same context are interpreted in different ways by different respondents. Our survey data ~~was~~ were collected in three linguistic regions of India, from respondents with a wide diversity ~~in~~ of socio-demographic characteristics, ~~of the respondents~~. While the survey questions were worded and translated in the three languages carefully in order to protect the reliability of our survey instrument, in large-scale survey projects like the present research, small changes in question wordings can largely affect respondents' answers (Bradburn, 1982).

Our research was severely limited by our inability to measure whether the viewer actually performed the behaviors he/she learned from the TV soap opera models at a later time. Nor could we measure the exact nature of the pro-social behaviors that viewers learned from the televised models. For example, we could not measure whether the viewers learned to treat women as more equal to men, or to adopt family planning, based on his/her observational learning. In this sense, our dependent variable did not cover the range of behaviors included within the learning concept.

— no - space here —

Future research on pro-development soap operas can overcome such limitations by point-of-referral monitoring in family planning clinics, to gather data from new adopters of family planning methods (Rogers, Hodge, and Jara, 1988). Such a limitation was overcome in the Winnard et al (1987) investigation of the effects of a family planning television variety show in Nigeria, whose effects were monitored in a family planning clinic in Enugu. Needed are more processual effects studies of pro-social television messages (such as "Hum Log"), in which the viewers' actual performance of a learned behavior can be measured.

BEYOND THE INDIAN EXPERIENCE

"Hum Log" has been off-the-air since late 1985. "Hum Log" demonstrated that India could effectively adapt the Mexican strategy of pro-development soap operas to India's specific socio-cultural needs. This successful experience persuaded several other Third World countries to launch television programs patterned after "Hum Log", and utilizing Bandura's social learning theory. Kenya went on-the-air with its first family planning television soap opera, "Tushauriani" ("Let's Discuss"), in 1987. "Tushauriani" is broadcast in Swahili, the lingua franca of Kenya, and is scheduled to run for 197 episodes. "Tushauriani" received very high television ratings in Kenya. Nigeria has a pro-development soap opera on the drawing boards. Mexico's Televisa is producing another family planning soap opera "Sangre Joven" ("Young Blood"), based on social learning theory, to be broadcast in 1989 in several Central and Latin American nations and in the U.S. An epilogue to episode will be delivered by a well-known national figure in

each country, an individual equivalent to Ashok Kumar. J.R.D. Tata, a leading Indian industrialist has pledged financial support for a successor to "Hum Log", called "Hum Rahi" ("Come Along With Me"), under preparation in India in 1988. Argentina, Egypt, Brazil, Pakistan, Bangladesh, Turkey, Thailand, Indonesia, Zimbabwe, Ghana, and Zaire plan to produce television soap operas based on social learning theory for family based on social learning theory for family planning in the near future.

Indian television is understandably proud of "Hum Log". "Hum Log" displayed one quality, which is not usually typical of most educational-development programs on television. "Hum Log" centered on an entertainment format, the television soap opera. As national television audiences continue to expand in Third World nations, the content of television programming becomes a crucial factor in determining whether television broadcasting will advance national development, or simply be used for entertainment.[7] Pro-development soap operas offer a promising potential for utilizing television's expanding audiences to reach educational-development goals. Pro-development soap operas also offer the potential of utilizing one human communication theory, ~~namely~~, Bandura's social learning theory, to foster pro-social effects among television viewers.

NOTES

1. Our research in India was funded by the Rockefeller Foundation. This research draws somewhat upon Singhal, Rogers, and Cozzens (1988), Singhal and Rogers (1988), and Singhal and Rogers (in press).

2. Bandura's social learning theory was translated and applied by Miguel Sabido in the design of his pro-development soap operas in Mexico (Televisa's Institute of Communication Research, 1981; Bandura, 1986). "Hum Log's" scriptwriter, Joshi, was aware of Bandura's social learning theory, and its applications by Sabido in Mexican pro-development soap operas. But, exactly how closely Joshi followed Bandura's social learning theory in designing "Hum Log" is unclear.

3. Televisa created, as well as evaluated, its pro-development soap operas in Mexico, and thus their claims of very strong effects might be questioned by some critics. Our evaluation of "Hum Log" is being conducted by researchers outside of Indian television.

4. Ashok Kumar is the doyen of the Indian film industry, something akin to Burt Lancaster in Hollywood.

5. Marathi is a close derivative of Hindi, and there are many cognates between the two languages. Tamil is a Dravidian language, quite removed from Hindi, with a completely different script and grammar. Our logic in selecting Delhi, Pune, and Madras as sample areas for our survey was to determine the effects of language differences on our respondents' viewing of Indian television.

6. We did not hypothesize any interaction effects between our 3 independent variables in their relationship with the dependent variable. Tests confirmed that our three independent variables did not interact in their relationship with the dependent variable.

7. The development potential of pro-social television in the Third World is enormous, given that in 1987, there were about 910 million television sets in the world, of which about 310 million were located in Third World countries. The Third World countries' share of the world population of TV sets increased from 5 percent in 1965, to 10 percent in 1975, to 14 percent in 1980, to 20 percent in 1984, and to 35 percent in 1987. Data on worldwide diffusion of TV sets are compiled from BBC's World Radio and Television Receivers (1987).

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