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DO MEDIA PORTRAYALS OF AFFLUENCE FOSTER FEELINGS OF RELATIVE

DEPRIVATION? EXPLORING A PATH MODEL OF SOCIAL COMPARISON AND

MATERIALISM ON TELEVISION VIEWERS' LIFE DISSATISFACTION

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Hyeseung Yang

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The thesis of Hyeseung Yang was reviewed and approved* by the following:

Mary Beth Oliver
Professor of Communications
Thesis Adviser
Chair of Committee

S. Shyam Sundar
Associate Professor of Communications

Fuyuan Shen
Assistant Professor of Communications

Mark E. Hill
Assistant Professor of Sociology

John S. Nichols
Professor of Communications
Associate Dean for Graduate Studies and Research

*Signatures are on file in the Graduate School.

ABSTRACT

American television programs have been criticized for being filled with images endorsing capitalist consumerism and for being weighted toward the upper middle classes. This study premised that heavy viewing of these distorted representations in the medium may culminate in decreases in individuals' subjective well-being. Consequently, a hypothesized path model investigated the supposition, based on cultivation and social comparison perspectives. Surveys were administered to 239 adults in a small city of Pennsylvania, and the data were subjected to path analysis. The findings of this study suggest that heavy television viewing may be associated with higher levels of material value, estimates of other people's affluence, and perceived gaps between the self and others in terms of material affluence. Importantly, the findings also suggest that material value and perceived social comparison gaps may be associated with dissatisfaction with standard of living, and that the dissatisfaction with standard of living in turn may influence both dissatisfaction with personal life and dissatisfaction with current social equality.

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Model of Social Comparison and Materialism on Television Viewers' Life Dissatisfaction

It becomes ever more difficult to visualize the world other than as a 'photo

opportunity' taken up, as a world without TV visualizing it.... Holiday-makers arm

themselves with camcorders: only when viewing their video-recorded exploits on a

TV screen back home can they be truly sure that the holidays did indeed happen. -

Zigmunt Bauman -

Introduction

Decades of research have demonstrated that television provides people with

important information about social reality. People understand the world through the lens

of television because "television is the source of the most broadly shared images and

messages in history," and it is "the common symbolic environment into which humans

are born and in which humans all live out our lives" (Gerbner, Gross, Morgan,

Signorielli, & Shanahan, 2002, p. 17). Therefore, it goes without saying that the ways

television represents social reality may have important effects on the ways audiences

perceive the quality of their own lives as well as that of other social members' lives. For

example, a television viewer may see what others' lives look like (e.g., what they

possess, what they enjoy, etc.) through mirrored images in the medium, and the

perceptions of other social members' lives, in particular their possessions and lifestyles,

may function as a yardstick by which the viewer judges the quality of his or her own life.

However, problems stem from the fact that the medium hardly represents the world

as is. The symbolic environment mirrored by television is much more affluent in many

ways. Frequently seen in the medium are images of materially comfortable lives of privileged social members. They live in roomy and luxurious mansions with beautiful, costly furniture. They eat at magnificent restaurants and drink at fabulous clubs. They enjoy life in the absence of heavy work; They never worry about money and always seem to have time. The distortion of representations in television has indeed been criticized by a substantial amount of research and commentary. Researchers have argued that television programs are filled with images that endorse consumerism, and that television characters are dominantly from privileged social classes (e.g., Butsch, 1992; Butsch & Glennon, 1983; DeFleur, 1964; Freeman, 1992; Gerbner, Gross, Jeffries-Fox, Jackson-Beeck, & Signorielli, 1978; Hirschman, 1988; Lichter, Lichter, & Rothman, 1994; Sklar, 1980; Thomas & Callahan, 1982).

What, then, may these types of distorted media representations invite in terms of viewer psychology? Repeated exposure to distorted television reality pertaining to wealth may influence reality judgments about other people's affluence. That is, viewers may come to believe that other people are wealthier than may actually be the case (e.g., O'Guinn & Shrum, 1997; Potter, 1991; Shrum, 2001; Shrum, O'Guinn, Semenik, & Faber, 1991; Weimann, 1984). In addition, cumulative viewing of such images may promote capitalist values such as materialism (e.g., Buijzen & Valkenburg, 2003; Churchill & Moschis, 1979; Kwak, Zinkhan, & Dominick, 2002; Richins, 1987; Shrum, Burroughs, & Rindfleisch, 2003).

Most importantly, repeated and cumulative exposure to the distorted media representations may culminate in adverse effects on viewers' subjective well-being, which is roughly equivalent to terms such as "subjective quality of life," "life

satisfaction," or more simply "happiness." A host of research has provided empirical evidence about the impact of television viewing on subjective well-being, showing that heavy television viewing is significantly related to many aspects of subjective well-being, such as depression, life dissatisfaction, etc. (e.g., Buijzen & Valkenburg, 2003; Kubey & Csikszentmihalyi, 1990; Morgan, 1984; Rahtz, Sirgy, & Meadow, 1988a, 1988b, 1989; Richins, 1987; Shrum, et al., 2003; Sirgy et al., 1998).

However, it should be noted that existing research on the negative association between television viewing and subjective well-being has usually explored the issue by simply investigating the correlations between television viewing measures and subjective well-being measures. In addition, the only psychological mechanism by which the existing research explores the relationship between television viewing and subjective well-being is through materialism that is believed to be cultivated by television.

The present study starts from an argument that there can be other psychological mechanisms in addition to materialism in explaining how television viewing affects viewers' subjective well-being. Consequently, the overarching objective of this study is to develop a more comprehensive theoretical framework with theory-laden mediators and explain more thoroughly the ways television viewing may culminate in decreases in viewers' subjective well-being.

Literature Review

Television Viewing and Subjective Well-Being

Television portrayals of wealth. Television is frequently criticized for providing

realities that are incomplete and in part distorted. Audiences appear to enjoy a false, over-

idealized reality provided by the medium. These distortions also apply to television

realities pertaining to wealth. American television programming has frequently been

criticized for being filled with images that endorse consumerism and for being populated

with characters, real and fictional, from privileged social classes. A host of research and

commentary has indeed argued for and/or evidenced this criticism (e.g., Butsch, 1992;

Butsch & Glennon, 1983; DeFleur, 1964; Freeman, 1992; Gerbner, et al., 1978;

Hirschman, 1988; Lichter, et al., 1994; Sklar, 1980; Thomas & Callahan, 1982).

For example, Condry (1989) argued that there is income disparity between what is

shown on television and what is true in the actual U.S. population by comparing

information from DeFleur's study (1964) and data from the U.S. Beureau of the Census

(1970). Figure 1 is the graphic representation of the comparison, suggesting that the

income distribution displayed on television is exactly opposite of the actual income

distribution in the U.S. population. The majority (60%) of the people on television was

from a wealthy class with incomes higher than $50,000, compared to only 15% of people

in the U.S. population who actually fall within this income group.

Figure 1. Income Disparity Between Televised World and Reality

Television Portrayals   Actual U.S. Population

Over $50,000   60%   Over $50,000   15%

$25,000-$50,000   34% $25,000-$50,000   33%

Under $25,000   6%   Under $25,000   52%
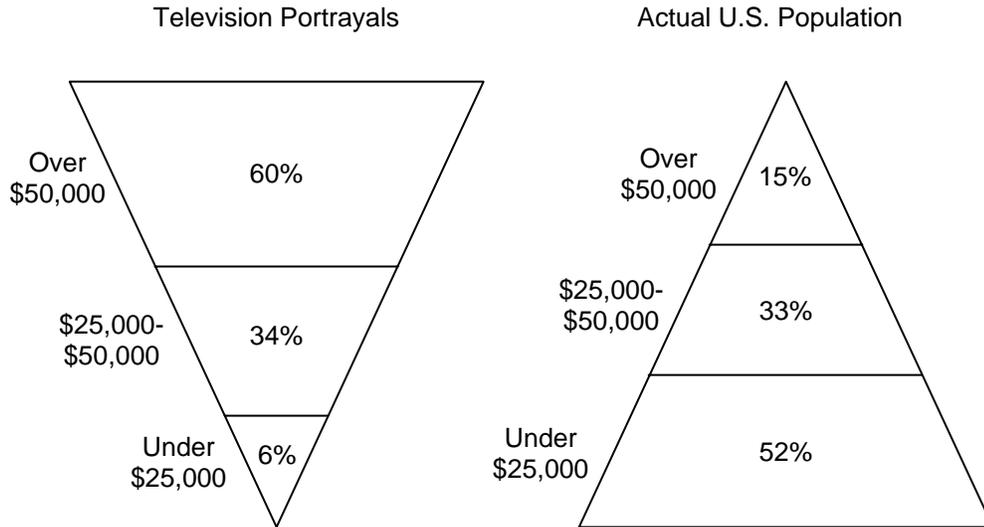
Source: Condry (1989), p. 70

Likewise, Lichter et al., (1994) examined characters on prime-time entertainment programs on the four major broadcast networks and found that prime-time entertainment programs in the U.S. have always been weighted toward the upper middle classes. The authors found that professionals including doctors, lawyers, and business executives were much more populous on television than in real life. In contrast, only one out of four characters were found to have low-status occupations. Specifically, their study counted only eight percent in white-collar jobs such as low-level office workers, supervisory staff in factories, telephone operators, cashiers, etc.; and only 17 percent in blue-collar or unskilled jobs such as carpenters, plumbers, electricians, domestic staffs, food service workers, etc.

Although it is difficult to find quantitative content analyses of lifestyles or possessions per se depicted on television, instead of income or job distributions, it is not absurd to infer that these incomplete and biased representations of social classes may

result in an excessive number of images on television that portray luxurious lifestyles and material possessions and that differ from the actual lives of most social members in American society.

Cultivation effects on subjective well-being. As mentioned previously, one concern about television's incomplete and distorted portrayals of wealth is that they may be harmful to viewers' subjective well-being. Subjective well-being refers to "how people evaluate their lives," and the concept "includes variables such as life satisfaction and marital satisfaction, lack of depression and anxiety, and positive moods and emotions" (Diener, Suh, & Oishi, 1997, p. 25). The literature on subjective well-being usually proposes to define the concept as composed of three factors that are distinct but correlated: (1) cognitive evaluations of the conditions of one's life (e.g., satisfaction with life), (2) the presence of positive affect (e.g., happiness), (3) the absence of negative affect (e.g., depression) (Campbell, 1981; Diener, Emmons, Larsen, & Griffin, 1985; Myers & Diener, 1996).

Among the most relevant theoretical perspectives that have been frequently mentioned with regard to the issue of distorted media representations is cultivation theory. Cultivation theory suggests that heavy television viewing "cultivates" beliefs, attitudes, and values which are more consistent with the world of television programs than with the everyday world (Gerbner, et al., 2002). Cultivation theory considers television as a socializing agent that educates viewers on the "television reality," and viewers are generally regarded as receptive and passive audiences who are tend to have faith in the television version of reality.

Cultivation theory has generated extensive research attention to many issues such as violence and crime, marital discord, etc., with the most prominent among these issues being media violence and crime. The general findings in this area suggest that heavy television viewers tend to see the world around them as a mean place and to be more mistrustful, alienated, and apprehensive (Gerbner, et al., 1978; Gerbner, Gross, Morgan, & Signorielli, 1980; Gerbner, Gross, Signorielli, Morgan, & Jackson-Beeck, 1979). For example, heavy television viewers estimate their risk of being mugged, raped or assaulted as quite high, although less than one percent of the population is actually affected by a violent crime in any year. In addition, they tend to be paranoid and afraid to trust anyone, due to their own insecurities.

Such findings from the "mean-world syndrome" research may well provide indirect but important clues concerning the possible association between television viewing and subjective well-being. Namely, perceived dangerousness, mistrust of people, and alienation from people may all be said to function as causes of decreases in subjective well-being. Based on this line of reasoning, Morgan (1984) measured directly the association between one's amount of television viewing and perceptions of life quality by analyzing a large national sample (N = 2960). The main finding of the study was that there was a negative correlation between television viewing and perceived quality of life. To be specific, heavy viewers were significantly more likely to say their lives were lousy (lonely, boring, depressing, unsatisfying, uneventful, and unhappy) and less likely to say their lives were great (interesting, active, meaningful, fun, fulfilling, stimulating, and exciting). It is notable that the author found this significant correlation between television viewing and perceived quality of life even after controlling for basic demographic

variables (i.e., sex, race, age, employment, education, income, marital status, and area of residence) and additional variables such as the extent to which respondents engaged in various hobbies and pursuits in their free time, the extent to which respondents were physically active in sports, and the extent to which respondents were concerned about various issues ranging from children's health to nuclear war. The author interpreted the finding as suggesting that heavy television viewers may experience feelings of depression by comparing their own lives and the lives of television characters because the lives of most television characters look fascinating and never dull but because their own lives may be seen less glamorous and exciting.

However, as many critics of cultivation research argued, correlational analyses make it difficult to conclude that television viewing is the cause of decreases in subjective well-being because any claims about causality cannot be tested directly with only correlations. With this in mind, many researchers have tried to infer causality by incorporating mediators and/or moderators believed to have impact on the psychological process of cultivation. As Shrum et al. (2003) noted:

How then to resolve the issue of causality? One possibility is to focus on psychological process variables that might either mediate or moderate the effects of television on viewers, and thereby suggest a basic logic to the underlying causal order. That is, if moderators or mediators of a particular relation can be identified that fit within a specified theory, then the pattern of results becomes much more difficult to explain from other causal perspectives. For example, if a particular relationship is moderated by some third variable, then to keep the alternative causal explanation open, the role of the moderator has to make equal sense when antecedent

and outcome are reversed. A similar logic applies to mediators (Shrum et al., 2003, p. 5).

Materialism as a psychological mechanism. What psychological mechanisms can play important roles in linking television viewing to decreases in subjective well-being? In regard to this question, materialism has received research attention (Buijzen & Valkenburg, 2003; Richins, 1987; Shrum et al., 2003; Sirgy et al., 1998). It is not surprising that materialism is one of the most important capitalist values that is likely to be cultivated by television viewing. Materialism is often defined as a set of centrally held beliefs about the importance of possessions in one's life (Richins & Dawson, 1992) or as an "orientation emphasizing possessions and money for personal happiness and social progress" (Ward & Wackman, 1971, p. 426).

The general finding of this line of research is that one's level of materialism may be positively associated with television viewing but negatively associated with subjective well-being. For example, Richins (1987) found that materialism may be an important factor that can explain the connection of television viewing to dissatisfaction with standard of living. Specifically, the author developed a seven-item materialism measure for the study, which includes four personal materialism items (e.g., "It is important to me to have really nice things" and "I would like to be rich enough to buy things I want") and three general materialism items (e.g., "People place too much emphasis on material things" and "It's really true that money can buy happiness"), and found that the amount of weekly television viewing was correlated with the personal materialism measure, and that the personal materialism measure was correlated with material satisfaction even after effects of income are controlled for. The author interpreted the results as suggesting that

more materialistic people are more dissatisfied with their standard of living than are less materialistic people.

More recently, Shrum et al. (2003) attempted to prove the mediating role of materialism between television viewing and subjective well-being. Consequently, the authors found a positive association between television viewing and materialism, a negative association between television viewing and life satisfaction, and a negative association between materialism and life satisfaction. Importantly, the strength of the association between television viewing and life satisfaction was found to reduce significantly after controlling for materialism.

Although the number of published studies that have explored the integrated picture of television viewing, materialism, and subjective well-being is limited, a substantial amount of research has examined separately the relationship between television viewing and materialism and the relationship between materialism and subjective well-being. First, some researchers have focused on how materialism may be heightened by television viewing, although they have not simultanerously examined subjective well-being (Cheung & Chan, 1996; Churchill & Moschis, 1979; Moschis & Churchill, 1978). For example, in exploring the influence of such socialization agents as television, family, and peers on adolescents' learning of such consumer orientations as materialism and social motivations for consumption (i.e., an orientation emphasizing conspicuous consumption and its importance to self-expression), Churchill and Moschis (1979) found that the amount of television viewing, peer communication about consumption, and gender (i.e., being male), were positively correlated with materialism among adolescents. The authors suggested that television as an "outside-of-home" socialization agent may

directly affect adolescents' learning of unreasonable consumer orientations. Cheung and Chan (1996) also found similar results in a study of Hong Kong adolescents. The authors found that the amount of weekday television viewing, along with the perceived reality of television content and repeated exposure (i.e., watching the same television serials everyday), was associated with Hong Kong adolescents' mean world value, which was defined as a combination of heightened materialism and diminished moral value in this study.

On the other hand, another line of research has demonstrated that materialism may have detrimental effects on individuals' subjective well-being, although few of the studies examined the issue of television viewing (Belk, 1984, 1985; Burroughs & Rindfleisch, 2002; Fournier & Guiry, 1993; Fournier & Richins, 1991; Kasser & Ryan, 1993; LaBarbera & Gurhan, 1997; Richins & Dawson, 1992; Ryan & Dziurawiec, 2001; Schroeder & Dugal, 1995; Wachtel & Blatt, 1990). For example, in the course of developing their values-orientated materialism scale, Richins and Dawson (1992) revealed that higher scorers on their materialism scale were less satisfied with their lives. Specifically, they were less satisfied with life as a whole, and with their amount of fun, their family life, and their income or standard of living. Ryan and Dziurawiec (2001) also reported similar results in a study of Australian adults. The authors found that higher scorers on Richins and Dawson's materialism scale were less satisfied with their life as whole, and with such life domains as amount of fun and enjoyment, family life, standard of living, place of residence, accomplishments, and health and physical condition. Finally, Burroughs and Rindfleisch (2002) found that materialism was negatively related with collective-oriented values such as family values and religious values, and that

materialism was negatively associated with subjective well-being (e.g., life satisfaction,

happiness, etc.) mediated by stress, particularly among individuals with high levels of

collective-oriented values. The authors interpreted their findings as suggesting that

psychological tension resulting from conflicts between material orientation and

collective-oriented values may produce a reduced sense of well-being.

Concerns from previous research. Several theoretical and methodological concerns

should be addressed from the existing research that has introduced materialism as a

theoretical mechanism by which the negative association between television viewing and

subjective well-being is explained. First, there seems to be little consensus with respect to

whether materialism should be regarded as a personality trait or a value. Although the

choice between the two may depend on the purpose or context of each study, it is

important to note that if a study is designed based on the idea of cultivation theory,

materialism conceptualized in the study should be able to characterize viewers' beliefs or

values instead of personality traits. For example, in exploring the relationship between

materialism and subjective well-being, a researcher may assume that one's subjective

well-being is affected by his or her materialistic character, whereas another researcher

may suppose that one's subjective well-being is influenced by material value. However,

given that personality traits are relatively stable compared with values, it is not

reasonable to imagine that television viewing may cultivate one's materialistic trait;

instead, it is reasonable to say that television viewing may cultivate one's material value.

Therefore, it is inappropriate for cultivation research to use measures of personality traits

to infer materialism. However, an examination of existing research reveals that some

researchers have employed Belk's (1984) materialism scale within the context of

cultivation (e.g., Cheung & Chan, 1996; Sirgy et al., 1998), which appears inappropriate because Belk's scale was originally devised to measure materialism as a personality trait including possessiveness, non-generosity, and envy, instead of measuring it as a value or belief.

Second, although attempts to introduce materialism as a moderator or a mediator have enriched our understanding of the negative relationship between television viewing and subjective well-being, it should be noted that research seems to have neglected findings about and evidence for other possible psychological mechanisms beyond materialism. Although it is quite reasonable to identify materialism as an important factor that lies between television viewing and life satisfaction, it may not be the sole or most important one. In addition to materialism, there may be other possible explanations that may shed light on the negative association between television viewing and subjective well-being.

In addition to the above concerns, it is worth noting that existing research has usually addressed the concept of subjective well-being only in terms of satisfaction with "personal" life. However, it is reasonable to imagine that incomplete and distorted television representations associated with wealth may have adverse effects on social members' satisfaction with their own society as well as with their personal lives. That is, many people who feel that they are relatively deprived may be highly likely to blame society as the system that generates inequality among social members. Therefore, this study proposes that there is no a priori reason to believe that individuals' subjective well-being is confined to personal life satisfaction as an individual, and that individuals'

perceptions of or satisfaction with society as a social member may also be an important aspect of their subjective well-being.

Based on the several concerns mentioned above, the next section of the literature review will address some issues including (1) what other psychological explanations in combination with materialism can shed light on the relationship between television viewing and subjective well-being in the context of cultivation, (2) how cultivation perspectives can be connected to other theoretical perspectives to extend our knowledge about the role of television viewing on subjective well-being, and (3) why and how one's satisfaction with society as a social member may be well integrated into the discussion of his or her state of subjective well-being as a complement to satisfaction with personal life as an individual.

Cultivation Effects of Television Viewing

First- and second-order cultivation. If television programs are filled with images and representations that endorse capitalist values, cumulative and long-term exposure to television is likely to implant these values into viewers' value systems. Materialism is one of the representative values that has been believed to be cultivated by heavy television viewing. However, is it only individuals' value systems that are thought to be influenced by heavy television viewing? Heavy television viewing may affect not only individuals' value systems, but it may also influence how they *estimate* characterstics about the world around them.

In this regard, Hawkins and Pingree (1990) provided an insightful explanation about different types of cultivation effects that heavy television viewing may have. These

authors noted that heavy television viewing may cultivate two different kinds of social reality beliefs: first-order and second-order social reality beliefs. First-order social reality beliefs refer to estimates of frequencies or probabilities of certain concepts or events (e.g., one's estimates of the percentages of people who own luxury cars), whereas second-order social reality beliefs involve internalization of certain ideas or values (e.g., one's belief about the importance of material possessions in his or her life). Moreover, the authors indicated that the two types of social reality beliefs are constructed independently of each other through different cognitive processes, and that "research should explicitly treat first- and second-order beliefs separately, propose specific theory-based processes for each, and test the effects as directly as possible" (p. 47).

This categorization seems to have remarkable implications in exploring the ways television viewing may affect subjective well-being. Although previous research has paid attention mainly to second-order social beliefs (e.g., materialism), it is quite conceivable that the adverse impact of television viewing on subjective well-being may be explained also by first-order social beliefs (e.g., estimation of other people's affluence) as well.

Moreover, first-order cultivation effects seem far clearer than second-order cultivation effects in explaining the causal relationship between television viewing and social reality beliefs. That is, the causality between television viewing and first-order social reality beliefs appears more unambiguous than that between television viewing and second-order social reality beliefs. In this regard, Hawkins and Pingree (1990) argued that the relationships between television viewing and second-order social reality beliefs are often weaker than those for first-order beliefs and have, in some cases, proven to be

spurious. They also argued that second-order effects are quite frequently confined to one population subgroup or even reversed for two different subgroups.

Television viewing and cultivation of reality judgments. Although rarely having been empirically connected to the issue of subjective well-being, the question of how television viewing cultivates first-order social reality beliefs pertaining to wealth has been explored by some researchers (Carlson, 1993; Fox & Philliber, 1978; O'Guinn & Shrum, 1997; Potter, 1991; Shrum, 2001; Shrum, O'Guinn, Semenik, & Faber, 1991; Weimann, 1984).

For example, O'Guinn and Shrum (1997) found that one's amount of television viewing was positively associated with estimates of others' possessions of products and activities that are indicative of affluence. Specifically, these authors reported that heavy television viewing was associated with the overestimation of the percentage of people believed to have luxury cars, hot tubs or Jacuzzis, and maids and servants. Additionally, the authors found that higher levels of soap opera viewing were also significantly associated with such overestimation even after controlling for some variables including total television viewing and income.

Similar findings were also obtained in an international context. For example, Weimann's (1984) study of Israel high school and college students found that heavy television viewers had an idealized, rosier image of life in the U.S. in terms of wealth, standard of living, and material possessions. For example, heavy television viewers were more likely than were light viewers to overestimate various indicators of wealth, such as the percentage of U.S. people employed in white collar occupations, the weekly earnings

of male workers, the ownership of electrical appliances and cars, and expenditure on recreation, clothing, accessories, and jewelry.

However, it should be noted that the findings of this line of cultivation research are not always consistent, and that some researchers have proposed that breakdowns of specific types of programs may be more effective in exploring this issue. For example, Fox and Philliber (1978) and Carlson (1993) failed to show the effects of television viewing on perceptions of affluence in the U.S. after controlling for such demographic variables as age, gender, education, income, etc. Particularly, education was found to be an important factor that discounted the effect of television viewing in both studies. Consequently, Carlson suggested that perceptions of affluence may be affected by specific types of programs, and found that heavy viewing of situation comedies and news programming was significantly related to perceptions of affluence. The author interpreted these result as reflecting the idea that the characters and families on situation comedies are, for the most part, quite affluent, and money problems are seldom central issues or themes on these shows. The author also mentioned that the reason why viewing of news programming was significantly related to perceptions of affluence may be "because news content emphasizes the powerful and important and perhaps poverty abroad, as opposed to poverty in America, those who are heavy viewers misperceive the extent of affluence in America" (p. 253).

Research on the impact of television viewing on reality judgments of others' affluence appears to have theoretical potential in explaining decreases in subjective well-being. However, because the primary purpose of this line of research was to evidence a first-order cultivation effect per se, the findings have not been substantially extended to

the issue of subjective well-being. How, then, can reality judgments of others' affluence be connected to decreases in subjective well-being? Television programs are populated by relatively wealthy people whose occupations, activities, and possessions are indicative of upper and middle class lifestyles (Hennigan et al., 1982). As a consequence, viewers might come to believe that a considerable proportion of people in America own luxury cars, regularly have wine with dinner, and attend charity balls (O'Guinn & Shrum, 1997). However, most viewers are not able to afford the luxurious lifestyles and possessions that are enjoyed by people on television. Therefore, heavy television viewers may believe that they have inferior living standards compared to the average person in society (an image cultivated by television), which is consequently connected to negative effects on subjective well-being.

In terms of theory, cultivation theory can provide insightful explanations regarding how viewers construct or distort "social" reality as a result of television viewing. However, exploring subjective well-being may require additional perspectives in addition to cultivation because one's subjective well-being certainly involves perceptions of the "self." Therefore, the current study proposes that individuals' experiences of comparisons with others, in addition to first- and second social reality beliefs, may provide an important psychological mechanism in explaining the negative association between television viewing and subjective well-being.

Social Comparison and Television Viewing

Social comparison theory. The idea that people tend to compare the self with others has been typically explored within the perspective of "social comparison." Social

comparison theory, originally outlined by Festinger (1954), fundamentally postulates that humans have a drive to compare their opinions and abilities to those of others because humans are motivated toward continual improvement. Social comparison theory also proposes that individuals tend to engage in social comparison if objective standards are unavailable. Furthermore, one of the most notable premises of the original theory is that individuals prefer to compare themselves to individuals who are similar because this provides a more precise evaluation of one's opinions or abilities.

One of the most prominent refinements of the original theory involves the recognition of the difference between downward and upward social comparisons. Wills (1981) differentiated two different social comparison processes according to the direction of comparison. Downward social comparison refers to comparisons with others who are inferior to oneself on a dimension of interest, whereas upward social comparison refers to comparisons with others who are superior to oneself on a dimension of interest. Research has shown that downward comparisons are usually associated with increases in subjective well-being, whereas upward comparisons are often associated with decreases in subjective well-being including such feelings as frustration, jealousy, and hostility, and low self-esteem. Research has reported that upward social comparisons are associated with decreases in subjective well-being particularly when individuals feel they lack control in improving their position (Aspinwall & Taylor, 1993; Martin, 1986; Salovey & Rodin, 1984; Testa & Major, 1990).

Another refinement of the original theory pertains to the development of the concept of "forced comparison," or "imposed comparison." Whereas classical social comparison theory premised that individuals voluntarily seek comparisons with similar versus

dissimilar others, recent work suggests that social comparison processes may be largely automatic, and that the nature and context of the comparisons may be forced by the environment (Gilbert & Giesler, 1995; Goethals, 1986; Suls, Martin, & Wheeler, 2000; Taylor, Buunk, & Aspinwal, 1990; Wayment & Taylor, 1995; Wood, 1989). This forced comparison hypothesis assumes that "others who are nearby serve as the primary standards against which to judge one's own standing because the information they provide is so accessible and salient…. Although there might be both superior and inferior others in the environment with whom a person might compare, the idea of forced comparison is that people automatically compare with those around them." (Diener & Fujita, p. 339)

The notions of upward comparison and forced comparison together may well describe the ways individuals make comparisons in the context of television viewing. If people on television are predominantly from wealthy classes and they enjoy materially comfortable lives, many heavy television viewers may experience frequent upward comparisons while watching television. Additionally, judging from the ubiquity and mass popularity of the medium in contemporary society, the upward comparisons may be largely imposed and automatic, regardless of viewers' own volition, such that television characters may serve as proximate others who provide social comparison information that is greatly accessible and salient. In this regard, Goethals (1986) suggested that comparisons with better off others may be forced by television content portraying happy, beautiful, and wealthy people.

Social comparison and mass media imagery. The idea that media users tend to compare themselves to media images, and that comparisons with media images may have

negative effects on media users' psychological well-being has been supported primarily by research on media users' upward comparisons with thin, idealized media models (i.e., body image disturbance research). The body image disturbance research argues that the media convey sociocultural pressures and ideals of attractiveness by presenting them as norms and values. Overall, research in this area suggests that exposure to idealized, attractive models in the mass media (e.g., advertisements, magazine pictures, etc.) may trigger upward comparisons among media users, and that those comparisons may result in negative effects on media users' affect, attitudes, and behaviors. Specifically, research has reported that there is an association between exposure to thin, idealized media characters or models and negative self-perceptions of one's body (Irving, 1990; Martin & Kennedy, 1993; Myers & Biocca, 1992; Posavac, Posavac, & Posavac, 1998; Richins, 1991; Thompson, 1990), lowered self-esteem (Harter, 1986, 1993; Rosenberg, 1986), and eating disorder symptoms (Botta, 1999; Heinberg & Thompson, 1995; Stice & Shaw, 1994; Thompson, Heinberg, & Tantleff, 1991).

The body image disturbance research has provided plausible accounts for psychological mechanisms about how people make comparisons with media images and how those comparisons can have adverse effects on media users' psychologies. However, it is important to note that the existing research has yet to apply the theoretical suppositions to a wide variety of social problems and issues. It is apparent that social comparison theory can be applied to many social problems and issues beyond that of body image. In this context, more directly applicable to the present study are the findings of Gulas and McKeage (2000). In their study of college students, Gulas and McKeage showed that social comparison perspectives can be expanded to other dimensions such as

financial success. More specifically, their experimental study found that exposure to idealized images of both physical attractiveness and financial success had a negative effect on participants' self-evaluations (i.e., self-esteem).

Subjective Well-Being Reconsidered

An observation of existing research reveals that scholarship has tended to highlight the effects of television viewing on subjective well-being only at the individual level rather than extending the implications of the effects to the societal level. Therefore, a variety of measures developed to capture television viewers' subjective well-being or perceived life quality have tended to involve individuals' satisfaction with their *personal* lives.

For example, Morgan (1984) considered a television viewer's perceptions of life quality as being related to such feelings as "exciting," "depressing," "hectic," and "boring." Even when researchers have attempted to extend the concept of subjective well-being to broader levels of perceptions, those attempts have tended to include only satisfaction with interpersonal relationships (e.g., relationships with family members or friends). For example, Richins and Dawson (1992) and Ryan and Dziurawiec (2001) asked their survey respondents to report their satisfaction with life, using questions about their satisfaction with personal life in general and satisfaction with different life domains including family life, relationship with friends, etc. Diener et al.'s (1985) Satisfaction with Life Scale, one of the widely used measures in the subjective well-being domain, is also a typical measure of satisfaction with personal life. The scale is composed of five items involving an individual's general, cognitive assessment of his or her own life, with

all the statement items including "my life" (e.g., "I am satisfied with my life," and "In most ways, my life is close to my ideal").

As discussed earlier, the effects of cultivation and social comparison may involve one's poor evaluation of his or her living standard. How, then, can poor evaluations of living standards be connected only to perceptions of personal life? It is reasonable to expect that one's poor evaluation of his or her living standard may trigger dissatisfaction with personal life, but it may also elicit dissatisfaction with the society as the system that is believed to cause his or her poor living standard.

A notable perspective that relates to the notion of satisfaction with society is that of relative deprivation. The term "relative deprivation" was coined by Stouffer, Suchman, DeVinney, Star, and Williams (1949) in their study of American soldiers. The authors pointed out that people compare their rewards with those of others in a comparison group, and that the outcome of this comparison determines group morale among the troops. One of the most important conceptual distinctions indicated in the relative deprivation literature is the distinction between individual and group relative deprivation. Runciman (1966) defined two different types of relative deprivation, "egoistic" deprivation and "fraternalistic" deprivation. Egoistic deprivation refers to feelings of deprivation that develop out of a comparison of one's own situation with the situation of other people, whereas fraternalistic deprivation refers to feelings of deprivation that develop out of a comparison of the situation of one's group relative to the situation of another group.

The theory of relative deprivation has important implications in terms of satisfaction with society. The affluent lives of other people depicted by television programs may lead

many viewers to compare their inferior living standard with that of wealthy people on television. Consequently, an individual who claims dissatisfaction with his or her living standard may perceive the inferior living standard as the product of his or her low social class position, and as caused, in some ways, by systematic problems such as inequality of opportunity and inequality of outcome rooted in society. In other words, negative evaluations of one's standard of living may activate dissatisfaction with one's personal life, but it may also elicit dissatisfaction with the society as the system that is believed to cause the inferior standard of living. Indeed, Hegtvedt and Markovsky (1995) pointed out that one's position in society tempers the perceived fairness of equality. Specifically, the authors showed that individuals occupying lower positions in the stratification system were less likely to judge inequality as fair and were more likely to favor a more equal distribution of wealth. Although Hegtvedt and Markovsky's findings address the importance of the *real* position of the self in society instead of the *perceived* position, these findings may be extended to the idea that individuals who perceive that they are relatively deprived may be more sensitive to the issue of social inequality.

Research Questions and Hypotheses

Figure 2 illustrates some of the theoretical paths that researchers have investigated with regard to the effects of television viewing on life satisfaction. Research has often attempted to find the direct relationship between television viewing and life satisfaction (path A). Additionally, research has examined material value as an important mediator that is believed to be cultivated by television viewing and that may have detrimental effects on life satisfaction (paths B through C). In terms of cultivation theory, material

value is a good example of second-order social reality beliefs that are considered to be cultivated by television viewing. In other words, existing research on the relationship between television viewing and life satisfaction has usually explored the issue by employing a second-order cultivation perspective.

However, Hawkins and Pingree (1990) argue that the relationships between television viewing and second-order beliefs are often weaker than those for first-order beliefs and have, in some cases, proven to be spurious. They also argue that second-order effects are quite frequently confined to one population subgroup or even reversed for two different subgroups. Therefore, the current study suggests that a first-order cultivation perspective may provide a stronger explanation for how television viewing is connected to claims of life dissatisfaction. To be more specific, television viewing may cultivate individuals' beliefs that other people are wealthier than may actually be the case (path D), culminating in claims of life dissatisfaction (path E).

Figure 2. Theoretical Paths Linking Television Viewing and Life Satisfaction
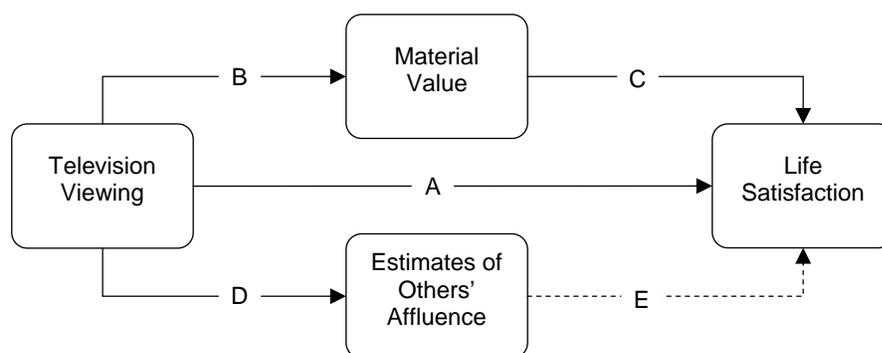
Although Figure 2 suggests theoretical paths mainly based on cultivation theory, it is worth noting that the path linking estimates of other's affluence to life satisfaction (path

E) may embody another theoretical perspective (i.e., social comparison). Although some researchers have suggested the potential of theoretical connections between cultivation and social comparison theories, most of the suggestions were limited to post-hoc speculations without empirical evidence. Therefore, the present study proposes the notion of social comparison, along with cultivation, as one of important theoretical frameworks that can provide useful explanations regarding the relationship between television viewing and life satisfaction.

It should be also noted that the concept of life satisfaction has frequently been explored at the individual level. However, the present study postulates that television viewing may provoke two different types of relative deprivation: egoistic deprivation (i.e., feelings of relative deprivation as an individual) and fraternal deprivation (i.e., feelings of relative deprivation as a group member). Accordingly, this study employs two different aspects or levels of life satisfaction (i.e., satisfaction with personal life and satisfaction with current social equality).

A review of existing literature and theoretical predictions provided a hypothesized path model regarding television viewing and life satisfaction. Figure 3 illustrates the hypothesized path model, which is composed of 13 research hypotheses. Television viewing was set as the only exogenous variable that is assumed to be directly associated with four different variables: dissatisfaction with personal life, material value, estimates of others' affluence, and social comparison gaps. Consequently, both material value and social comparison gaps were hypothesized to be associated with three dissatisfaction variables: dissatisfaction with standard of living, dissatisfaction with personal life, and dissatisfaction with current social equality. Additionally, dissatisfaction with standard of

living was assumed to be a partial mediator between material value or social comparison gaps and the two dissatisfaction variables examined.

It is possible to imagine that the two psychological mechanisms proposed in this study (i.e., materialism and social comparison) may be confounded. That is, material value may be strongly associated with social comparison gaps. However, if social comparison is a corollary of a first-order cultivation effect, it may be reasonable to consider the cognitive process being constructed independently of material value, as Hawkins and Pingree (1990) suggested. In other words, comparing others and the self in terms of wealth may not necessarily require or reflect one's value system.

Figure 3. The Hypothesized Path Model of Television Viewing and Life Satisfaction
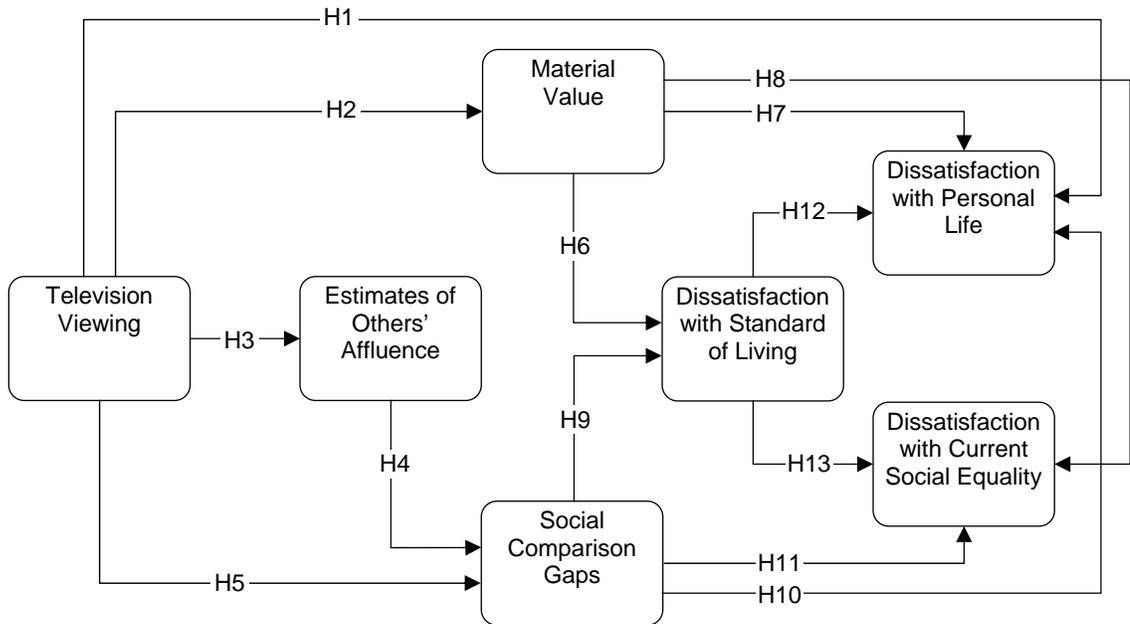
Research has provided evidence that television viewing may be directly associated with dissatisfaction with individual life. The first hypothesis is in line with this argument:

H1: Television viewing will be positively correlated to dissatisfaction with personal life.

Repeated exposure to biased television images and representations regarding wealth may have an effect on viewers' second-order social reality beliefs. In other words, the more one watches television, the more he or she will come to place material value before other things in his or her value system. This reasoning leads to the second hypothesis:

H2: Television viewing will be positively correlated to material value.

The current study proposes that repeated exposure to biased television images and representations regarding wealth may also have an effect on viewers' first-order social reality beliefs. That is, the more one watches television, the more he or she will come to believe that a considerable proportion of people in America enjoy material possessions and luxurious lifestyles. This reasoning leads to the third hypothesis:

H3: Television viewing will be positively correlated to estimates of others' affluence.

It is possible to imagine that estimation of others' affluence may play a role as a mediator that links television viewing to social comparisons such that biased estimation about others' affluence cultivated by television can be related to perceived comparison gaps between the self and others. This line of reasoning leads to the following hypothesis exploring a possible connection between a first-order cultivation effect and a social comparison process:

H4: Estimates of others' affluence will be positively correlated to larger perceived social comparison gaps.

H3 and H4 assume an indirect effect of television viewing on social comparisons. However, it is also possible to imagine that television viewing may be directly associated with social comparison gaps. That is, making upward social comparisons (i.e., comparing the self with people who are better off) may not necessarily require estimation of others' affluence as a mediating process because television viewing per se provides frequent moments of upward social comparisons. This reasoning leads to the following hypotheses:

H5: Television viewing will be positively correlated with larger perceived social comparison gaps (i.e., the perceived gaps between others and the self in terms of material affluence).

One's material value may be associated with frustration with standard of living, personal life in general, and even current social equality. This reasoning leads to another series of hypotheses:

H6: Material value will be positively correlated with dissatisfaction with standard of living.

H7: Material value will be positively correlated with dissatisfaction with personal life.

H8: Material value will be positively correlated with dissatisfaction with current social equality.

The perceived gaps between others and the self in terms of material affluence may often result in individuals' frustration with their standard of living (e.g., financial security, income levels, etc.), personal life in general, and even current social equality. This reasoning leads to a series of hypotheses:

H9: Social comparison gaps will be positively correlated with dissatisfaction with standard of living.

H10: Social comparison gaps will be positively correlated with dissatisfaction with personal life.

H11: Social comparison gaps will be positively correlated with dissatisfaction with current social equality.

Frustration with standard of living may play a role as a mediator that links both materialism and social comparison to frustration with personal life or frustration with current social equality. This line of reasoning leads to the following hypotheses:

H12: Dissatisfaction with standard of living will be positively correlated with dissatisfaction with personal life.

H13: Dissatisfaction with standard of living will be positively correlated with dissatisfaction with current social equality.

In addition to 13 hypotheses explicitly represented as paths in the hypothesized path model, three research questions were additionally posited for further investigation of the hypothesized path model in several different contexts. First, this study proposes that individuals' income levels can play a vital role as a moderator that strengthens or dilutes the effects of television viewing in this model. Gerbner (1980) reported that "resonance"

(a "double-dose" effect) occurs when a viewer's real-life experiences are congruent with those depicted in the television world. One of frequently mentioned examples is gender as a resonance factor in perceptions of crime. That is, since women are most likely to be victims of crime on television, women heavy viewers come to feel more fearful for themselves as women. The same logic may be applied to this study. Relatively deprived social members may experience frequently the feelings of relative deprivation in their everyday lives, and heavy television viewing may intensify the feelings of relative deprivation, because television is filled with images that depict materially comfortable lives of privileged social members.

RQ1: Is the pattern of the hypothesized path model invariant over low- and high-income groups?

It is not difficult to imagine that if other demographic variables (e.g., age, gender, education levels, etc.) are introduced in the model, in addition to income levels, the effects of television viewing hypothesized in this study may decrease or disappear. This reasoning is particularly consistent with criticisms that the cultivation effect may be a spurious effect that can be attributable to common background characteristics (Hirsch, 1980; Hughes, 1980).

RQ2: Does introducing demographic variables into the hypothesized path model reveal spurious effects of television viewing?

The hypothesized path model placed the amount of general television viewing as a sole exogenous variable. However, it is possible to postulate that different genres or program types (e.g., drama, comedies, soap operas, game shows, etc.) may contribute to

cultivation of different realities (Hawkins & Pingree, 1981, p. 299). This reasoning has been examined in research, with studies showing mixed findings. For example, O'Guinn and Shrum (1997) found that viewing soap operas heightens estimates of others' affluence, whereas Carlson (1993) found that viewing news and situation comedies is related to the amplified estimation.

RQ3: How do different program types contribute toward cultivation, social comparisons, and consequently life satisfaction?

Methods

Survey Instrument

The instrument used to test the hypothesized path model was a traditional paper-and-pencil, self-administered questionnaire. The four-page structured questionnaire sequentially listed measurement scales for dissatisfaction with current social equality, dissatisfaction with personal life, dissatisfaction with standard of living, material value, estimates of others' affluence, television viewing, and demographic variables. To avoid context effects, the order of the measures in the questionnaire followed the opposite direction of the path flow in the hypothesized path model (for the structure of the questionnaire, see Appendix 2).

Sample

The questionnaire was administered to a convenience sample of 239 individuals aged 18 or older from State College, Pennsylvania in July through December of 2004. To secure sufficient variance in respondents' demographic backgrounds (e.g., age, income, education levels, etc.), surveys were administered at public places including the airport of the town, retail markets, grocery markets, and laundries, where the researcher could access a variety of people with a wide range of variability in demographic factors. Individuals were asked if they were willing to participate in the study, and an implied informed consent form, along with a questionnaire, was provided to them upon consenting to participate. It took about 10 to 15 minutes for a participant to complete the entire questionnaire.

Table 1. *Demographic Characteristics of the Sample* (N = 239)

Variable	Frequency or Statistic
Gender	
Men	117
Women	122
Age	
18-24	27
25-34	65
35-44	47
45-54	53
55-64	31
65 or Over	16
M	40.92
SD	14.33
Race	
White/Caucasian	223
African American	7
Latino/Hispanic	5
Other	4
Education Level	
High School Graduate	48
Attended Some College	28
Associate Degree	15
Bachelors Degree	71
Post-College Graduate	77
Marital Status	
Couple, Married	141
Couple, Cohabiting	13
Single, Never Married	63
Single, Separated or Divorced	20
Single, Widowed	2
Household Income	
Less than $15,000	9
$15,000-$24,999	21
$25,000-$34,999	20
$35,000-$49,999	28
$50,000-$74,999	47
$75,000-$99,999	31
$100,000-$149,999	41
$150,000-$199,999	11
$200,000 or Higher	17
Missing	14
Number of Adults in Household	
M	2.03
SD	.79
Number of Children in Household	
M	.68
SD	1.01

Although the sample was selected based on a convenience sampling technique, some considerations were given in the process of approaching respondents: only one person was included in the sample from a household, and respondents were deliberately selected to represent a reasonable amount of variability in gender and age. Reported in Table 1 are demographic characteristics of the sample. The sample was composed of similar proportions of males (n = 117, 49.0%) and females (n = 122, 51.0%), with the age of the participants ranging from 18 to 81 (*M* = 40.92). An overwhelming majority of the sample was White (n = 223, 93.3%), and more than half of the respondents reported that they were married (n = 141, 64.4%). On average, a household was composed of 2.71 members (adults: 2.03; children: 0.68).

Measures

Television viewing. Television viewing was assessed using two different measures: (1) amount of weekly television viewing and (2) amount of viewing various program types. The former measure employed a modified version of Shrum's (1996) measure, in which respondents reported the number of hours spent watching television on weekdays within four parts of a day (6 a.m. to noon, noon to 7 p.m., 7 p.m. to 10 p.m., and 10 p.m. to 6 a.m.), and on Saturdays and Sundays (see Appendix 2). An individual's amount of weekly television viewing was obtained by calculating the responses. Respondents reported an average of 21.70 hours of weekly television viewing.

The latter measure involved respondents' estimates of the number of hours per week spent watching each of seven program types: movies; drama; comedies/sitcoms; soap operas; news; music/celebrity shows; and game shows. For the purpose of clarification of

such program types as drama, soap operas, and music/celebrity shows, several program

examples were presented. For example, for soap operas, such programs as "All My

Children," "The Young & The Restless," and "Days of Our Lives" were presented, and

for drama, such programs as "NYPD Blue," "Judging Amy," "Law & Order," and "24"

were listed. For music/celebrity shows, such examples as "All Access," "It's Great To

Be…," "Diary," and "TRL" were provided (see Appendix 2). Although the seven

program types were not exhaustive in their scope, they were deliberately chosen because

they were believed to be meaningful, considering the context and purpose of the current

study. Respondents reported an average of 3.25 hours for movies, 2.02 hours for drama,

1.86 hours for sitcom/comedies, and 4.20 hours for news. The other three genres, soap

operas, music/celebrity shows, and game shows, all received mean scores below 1 hour

(0.37, 0.73, and 0.65, respectively). (For details of each program type, see Table 2.)

Table 2. *Means and Standard Deviations of Main Measures*

Variable	M	SD
Television Viewing (Hours/Week)		
General Viewing	21.70	12.55
Movies	3.25	3.84
Drama	2.02	3.09
Sitcoms/Comedies	1.86	2.53
Soap Operas	.37	1.57
News	4.20	4.36
Music/Celebrity Shows	.73	1.74
Game Shows	.65	1.80
Estimates of Others' Affluence	17.88	13.21
Material Value	3.21	1.24
Social Comparison Gaps	3.52	1.39
Dissatisfaction with Standard of Living	2.95	1.23
Dissatisfaction with Personal Life	2.74	1.09
Dissatisfaction with Current Social Equality	4.20	1.07

Material value. Material value was measured by Richins' (2004) six-item Material

Values Scale, which is a short version of Richins and Dawson's (1992) 18-item Material

Values Scale. Richins and Dawson's original 18-item scale was developed to measure

individuals' material value, which is composed of three sub-dimensions: Acquisition

Centrality, Acquisition as the Pursuit of Happiness, and Possession-Defined Success. The

six-item scale is also based on the three sub-dimensions and includes such items as "I

admire people who own expensive homes, cars, and clothes," and "The things I own say

a lot about how well I'm doing in life." The original six-item scale showed a high level of

internal consistency (Cronbach's α = .81) as well as reasonable validity correlations with

a variety of other measures (e.g., Belk Materialism Scale, Schwartz Value Survey, etc.).

The data of the present study also showed an acceptable level of internal consistency

(Cronbach's α = .86).

Estimates of others' affluence. To measure how individuals estimate other

Americans' possessions and lifestyles associated with affluence, a modified version of

O'Guinn and Shrum's (1997) measure was used. Some of the original items were revised,

considering the change of social circumstances in terms of objects and activities

indicative of affluence. Eight questions were asked with regard to their perceptions of the

amount of affluence in the United States. The first four items represented possessions of

objects that are symbols of affluence (e.g. "I guess ___ % of U.S. people own yachts"),

and the other four items represented luxurious lifestyles that are also indicative of

affluence (e.g., "I guess ___ % of U.S. adults belong to country clubs"). The congregated

scale of these eight items showed a high level of internal consistency (Cronbach's α =

.91).

Social comparison gaps. The perceived gaps in wealth between others and the self were measured using Solberg et al.'s (2002) Social Comparison Discrepancy measure. This measure is composed of eight items including "I can afford to travel more than other people," and "I can afford better food and drink than other people." One of the eight items was dropped because the item was developed exclusively for students in the original study (i.e., "I can afford to pay school expenses more easily than other students"). The original study showed a high level of internal consistency (Cronbach's α = .91), and the data of the present study also showed a high level of internal consistency (Cronbach's α = .96).

Dissatisfaction with standard of living. To measure one's dissatisfaction with standard of living, the researcher created a measure in which four different aspects of standard of living were included: material ownership, leisure life, household income, and financial security (e.g., "I am satisfied with the quality of my leisure life," and "I am satisfied with my [or my household's] financial security"). The four-item scale showed an acceptable level of internal consistency (Cronbach's α = .86).

Dissatisfaction with personal life. One's dissatisfaction with personal life was measured by the Satisfaction with Life Scale (Diener et al, 1985). The scale focuses on one's global satisfaction with personal life, rather than satisfaction with specific life domains (e.g., family, work, etc.). The scale is composed of five items including "I am satisfied with my life," and "In most ways, my life is close to my ideal." Diener and colleagues' original study and subsequent studies reported a high level of internal consistency of the scale (Cronbach's α = .80 to .87; see Pavot & Diener, 1993). The original study also reported a two-month test-retest correlation coefficient equal to .82,

demonstrating a high level of test-retest reliability. In addition, this scale has shown

reasonable validity correlations with other measures such as extroversion and neuroticism

(Diener et al, 1985; Pavot & Diener, 1993, Pavot, Diener, Colvin & Sandvik, 1991). The

data of the present study also showed an acceptable level of internal consistency

(Cronbach's α = .87).

Dissatisfaction with current social equality. To measure one's dissatisfaction with

fulfillment of social and economic equality in the current U.S. society, the researcher

developed a scale composed of eight items. Those items were extracted from the General

Social Survey and modified for respondents to answer on a Likert-type scale. Among the

eight items, four items represented equality of opportunity (e.g., "In the United States,

people can get ahead by their own hard work"), whereas the other four items represented

equality of outcome (e.g., "Differences in income between the wealthy and the poor in

the United States are too large"). The eight-item scale showed an acceptable level of

internal consistency (Cronbach's α = .81).

Control variables. The questionnaire included demographic variables such as gender,

age, income, and education level, which functioned as control variables in the process of

data analysis.

Results

Analysis of the Hypothesized Path Model

Evaluation of the initial model. Structural equation modeling application AMOS 5 modeled the relationships among the following variables: television viewing; estimates of others' affluence; perceived social comparison gaps; telic comparison gaps; material value; dissatisfaction with standard of living; dissatisfaction with individual life; and dissatisfaction with current social equality. The model estimated only one residual correlation between endogenous variables that was placed in the last part of the model (i.e., between dissatisfaction with personal life and dissatisfaction with current social equality). Table 3 shows Pearson correlation matrix of these eight variables. As theoretically assumed before, the association between the two psychological mechanisms proposed in this model (i.e., material value and social comparison gaps) were weak (r = .08, p = .25), suggesting that the two mechanisms are not confounded.

Like other structural equation modeling applications, AMOS 5 provides a variety of estimation methods such as maximum likelihood, unweighted least squares, generalized least squares, Browne's asymptotically distribution-free criterion, and scale-free least squares. Among those, maximum likelihood estimates are considered to be consistent and efficient. That is, in this estimation method, the probability that the parameter estimate approaches the true parameter value increases with the size of the sample, and the most reliable estimates can be produced (Pampel, 2000). Therefore, it was decided that maximum likelihood estimation method would be used for testing the hypothesized path model in this study.

Maximum likelihood estimation requires the assumption of multivariate normality. In other words, maximum likelihood estimation method can produce the best estimates if the variables have a multinormal distribution. Research has suggested that maximum likelihood and generalized least squares estimation can give biased standard errors and incorrect test statistics in the lack of multivariate normality (Chou, Bentler, & Satorra, 1991; Hair, Anderson, Tatham, & Black, 1992; Hu & Bentler, 1995; West, Finch, & Curran, 1995). The multivariate normality assumption is often evaluated univariately by checking the presence of excessive skewness and kurtosis in the data. Some researchers suggest that absolute skewness values greater than 3.0 may be considered extremely skewed (e.g., Chou & Bentler, 1995; Hu, Bentler, & Kano, 1992; West, Finch, & Curran, 1995), and that absolute kurtosis values greater than 10.0 may indicate a problem and values greater than 20.0 may indicate a more serious one (e.g., Kline, 1998). Table 3 lists the distributional statistics of the variables involved in the hypothesized path model, which reveals that the variables have a relatively normal distribution.

In theoretical model testing in structural equation modeling, a major issue is whether the theoretical model conflicts with reality as observed in the sample (i.e., how well the theoretical model fits the data). Many indicators are calculated by structural equation modeling applications to evaluate the goodness of fit of models. In the present study, the hypothesized path model was evaluated by a variety of goodness of fit indices, including the chi-square statistic (χ^2), the comparative fit index (CFI), the nonnormed fit index (NNFI), and the root mean square error of approximation (RMSEA).

The most fundamental measure of goodness of fit is the χ^2 statistic. The χ^2 value should not be significant if there is a good model fit. A *p*-value larger than .05 is

generally considered acceptable. The χ^2 statistic of the present study showed that the hypothesized path model fit the data well, $\chi^2 [7] = 9.87$, $p = .20$.

The CFI varies from 0 (poor fit) to 1 (perfect fit), which compares the existing model fit with a null model in which none of variables in the model are assumed to be correlated. CFI values above .90 are thought to indicate reasonable or adequate fit (Bentler & Bonnett, 1980; Jaccard & Wan, 1996); CFI values above .95 are considered excellent fit (Hu & Bentler, 1999). The CFI value of the hypothesized path model in this study was .99, which indicates an excellent fit.

The NNFI, also known as the Tucker-Lewis index (TLI), is one of alternatives to the CFI and adjusted for model complexity (i.e., the number of parameters). The NNFI usually ranges from 0 (poor fit) to 1 (perfect fit), but can be greater than 1 when the fit of an overidentified model is almost perfect (Kline, 1998, p. 180). Like many other global model fit indices, NNFI values larger than .90 are considered acceptable, good fit (Bentler & Bonnett, 1980; Byrne, 1998); values above .95 are considered excellent fit (Hu & Bentler, 1999). The NNFI value of the hypothesized model in this study was .98, indicating an excellent fit.

On the other hand, the RMSEA is a measure of discrepancy per degree of freedom between the true population model and the hypothesized model. It is commonly considered that RMSEA values less than .05 (Browne & Cudeck, 1993; Byrne, 1998) or .06 (Hu & Bentler, 1999) indicate a good or close fit. The hypothesized path model in this study produced an RMSEA value of .041, which indicates a close fit.

In sum, values for the CFI, NNFI, and RMSEA, in addition to the χ^2 statistic, satisfied conventional cut-off criterion used to determine good fit, suggesting that the model fits the data well.

Table 3. *Evaluation of the Hypothesized Path Model*

Correlations (N = 239)

Variable	1	2	3	4	5	6	7
1. Weekly Television Viewing	-						
2. Material Value	.11	-					
3. Estimates of Others' Affluence	.31	.14	-				
4. Social Comparison Gaps	.20	.08	.20	-			
5. Dissatisfaction with Standard of Living	.08	.21	.05	.54	-		
6. Dissatisfaction with Personal Life	.17	.19	.12	.44	.71	-	
7. Dissatisfaction with Current Social Equality	-.05	.01	.08	.20	.36	.39	-

Distributional Statistics

Variable	*M*	*SD*	Skew.	Kurt.	Min.	Max.
1. Weekly Television Viewing	21.70	12.55	.85	.68	.00	64.00
2. Material Value	3.21	1.24	.30	-.51	1.00	6.50
3. Estimates of Others' Affluence	17.88	13.21	.95	.25	1.13	61.25
4. Social Comparison Gaps	3.52	1.39	.27	-.36	1.00	7.00
5. Dissatisfaction with Standard of Living	2.95	1.23	.58	-.08	1.00	6.50
6. Dissatisfaction with Personal Life	2.74	1.09	.77	.42	1.00	6.20
7. Dissatisfaction with Current Social Equality	4.20	1.07	-.02	-.15	1.25	7.00

Goodness of Fit Summary

χ^2	df	*p*	CFI	NNFI	RMSEA
9.87	7	.196	.992	.975	.041

Investigation of path coefficients and hypothesis testing. AMOS 5 provides not only estimated path coefficients but also standard errors, calculated t-values and *p*-values

associated with path coefficients. A hypothesis is confirmed if the estimated path coefficient is significant and has the hypothesized sign. In this research, one-tailed significance tests were used because the hypotheses in this study formulated explicit predictions regarding the direction of each association between variables. A t-value larger than 1.645 corresponds to $p < .05$ (moderately significant), and t-value greater than 2.326 corresponds to $p < .01$ (strongly significant) (Harnett & Murphy, 1985).

All the estimated parameters are displayed in Table 4, including estimated path coefficients, disturbance variances, and disturbance covariances. Figure 4 illustrates relationships among variables, using the estimated path coefficients in standardized form. An inspection of the estimated path coefficients shows that the data supported most of the purported hypotheses. Among 13 hypotheses, nine hypotheses were confirmed by the data.

First, H1 postulated that television viewing would be positively associated with dissatisfaction with personal life. Consistent with the expectation, the greater the amount of television viewing, the higher levels of dissatisfaction with personal life ($t = 2.57$, $p < .01$). In addition, all hypotheses that expected direct effects of television viewing in the model were strongly supported. Specifically, H2 and H3 proposed that television viewing would be positively associated with materialism (a second-order cultivation effect) and estimates of others' affluence (a first-order cultivation effect), respectively. As predicted, the greater the amount of television viewing, the higher levels of materialism ($t = 1.77$, $p < .05$) as well as higher estimates of others' affluence ($t = 5.03$, $p < .001$).

All hypotheses concerning perceived social comparison gaps also received strong support. Specifically, H5 predicted that television viewing would be positively associated

with social comparison gaps. Consistent with the expectation, the greater the amount of television viewing, the higher levels of social comparison gaps ($t = 2.33$, $p < .01$). In addition to the direct association between television viewing and social comparison gaps, an indirect association between these two variables was also found, supporting H4 that predicted a positive association between estimates of others' affluence and social comparison gaps ($t = 2.34$, $p < .01$).

The hypotheses concerning the positive associations between material value and dissatisfaction with standard of living (H6), dissatisfaction with personal life (H7), and dissatisfaction with current social equality (H8) received mixed support. This study postulated that material value would be positively associated with dissatisfaction with standard of living. As predicted, the higher levels of material value, the more dissatisfaction with standard of living ($t = 3.19$, $p < .001$). However, neither of the coefficients for the paths linking material value to dissatisfaction with personal life ($t = .66$, $p = .26$) or dissatisfaction with current social equality ($t = -1.17$, $p = .12$) were reliably different from zero.

The hypotheses concerning the positive associations between social comparison gaps and dissatisfaction with standard of living (H9), dissatisfaction with personal life (H10), and dissatisfaction with current social equality (H11) also received mixed support. This study hypothesized that social comparison gaps would be positively associated with dissatisfaction with standard of living. Consistent with the expectation, the higher levels of social comparison gaps, the more dissatisfaction with standard of living ($t = 9.80$, $p < .001$). However, neither of the coefficients for the paths linking social comparison gaps to

dissatisfaction with personal life ($t = 1.09$, $p = .14$) or dissatisfaction with current social

equality ($t = .06$, $p = .48$) were reliably different from zero.

Table 4. *Parameter Estimates for the Hypothesized Path Model*

Parameter	Estimate[a]	S.E.	t	p
Path Coefficients				
Weekly Television Viewing → Dissatisfaction with Personal Life	.010 (.115)	.004	2.570	.005
Weekly Television Viewing → Material Value	.011 (.114)	.006	1.768	.039
Weekly Television Viewing → Estimates of Others' Affluence	.326 (.310)	.065	5.033	.000
Estimates of Others' Affluence → Social Comparison Gaps	.016 (.154)	.007	2.337	.010
Weekly Television Viewing → Social Comparison Gaps	.017 (.154)	.007	2.331	.010
Material Value → Dissatisfaction with Standard of Living	.170 (.172)	.053	3.194	.001
Material Value → Dissatisfaction with Personal Life	.027 (.030)	.041	.657	.256
Material Value → Dissatisfaction with Current Social Equality	-.063 (-.072)	.054	-1.170	.121
Social Comparison Gaps → Dissatisfaction with Standard of Living	.465 (.527)	.047	9.800	.000
Social Comparison Gaps → Dissatisfaction with Personal Life	.046 (.059)	.042	1.092	.138
Social Comparison Gaps → Dissatisfaction with Current Social Equality	.003 (.004)	.055	.056	.478
Dissatisfaction with Standard of Living → Dissatisfaction with Personal Life	.586 (.657)	.048	12.154	.000
Dissatisfaction with Standard of Living → Dissatisfaction with Current Social Equality	.323 (.368)	.064	5.061	.000
Disturbance Variances				
D: Material Value	1.502 (.987)	.138	10.909	.000
D: Estimates of Others' Affluence	157.1 (.904)	14.4	10.909	.000
D: Social Comparison Gaps	1.802 (.938)	.165	10.909	.000
D: Dissatisfaction with Standard of Living	1.030 (.788)	.094	10.909	.000
D: Dissatisfaction with Personal Life	.570 (.479)	.052	10.909	.000
D: Dissatisfaction with Current Social Equality	.996 (.867)	.091	10.909	.000
Disturbance Covariances				
D: Dissatisfaction with Standard of Living ↔ *D:* Dissatisfaction with Current Social Equality	.173 (.230)	.050	3.456	.001

Note. D, disturbance.
[a] Unstandardized (standardized). The standardized values for the disturbance variances are proportions of unexplained variance ($1-R^2$).
P-values for path coefficients reflect one-tailed tests.

It is notable that dissatisfaction with standard of living was found to mediate the associations between materialism or social comparison gaps and dissatisfaction with personal life or dissatisfaction with current social equality. Consequently, H12 and H13 gained strong support. To be specific, dissatisfaction with standard of living was positively associated with dissatisfaction with personal life ($t = 12.15$, $p < .001$) and dissatisfaction with current social equality ($t = 5.06$, $p < .001$).

Figure 4. The Hypothesized Path Model and Estimated Standardized Path Coefficients
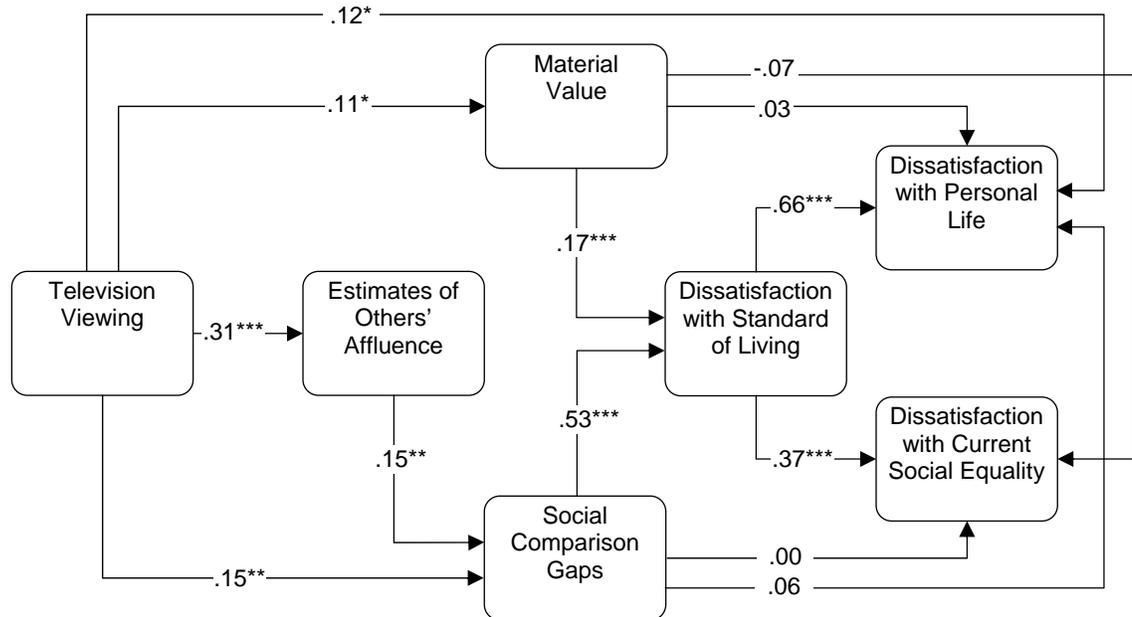
***$p < .001$, **$p < .01$, *$p < .05$, one-tailed

Considering modification of the hypothesized model. In path analysis, although a model has obtained an acceptable level of goodness of fit, it does not guarantee that the model is the best one that can be found. Therefore, model modification is often conducted in order to improve the theoretical explanations or the goodness of fit of models. In this line of reasoning, it was decided to drop paths that are non-significant for the purpose of

model simplification (Material Value → Dissatisfaction with Personal Life; Material

Value → Dissatisfaction with Current Social Equality; Social Comparison Gaps →

Dissatisfaction with Personal Life; Social Comparison Gaps → Dissatisfaction with

Current Social Equality).

Theoretically, it appears reasonable to drop the direct paths linking both material

value and social comparison gaps to both dissatisfaction with personal life and

dissatisfaction with current social equality because dropping the paths can highlight the

mediating role of dissatisfaction with standard of living. That is, the new model can

clearly show that both material value and social comparison gaps may trigger

dissatisfaction with standard of living, and the dissatisfaction with standard of living in

turn elicits both dissatisfaction with personal life and dissatisfaction with current social

equality. Statistically, dropping the non-significant paths generally increased goodness of

fit indices of the model. Reported in Table 5 is the comparison of goodness of fit indices

between the original and modified models, which shows that the modification enhanced

especially the NNFI and RMSEA values. Figure 5 illustrates the new, modified path

model.

Table 5. *Goodness of Fit Comparison of Original and Modified Models*

Model	χ^2	df	p	CFI	NNFI	RMSEA
Original Model	9.87	7	.196	.992	.975	.041
Modified Model	13.20	11	.280	.994	.988	.029

Figure 5. The Modified Path Model and Estimated Standardized Path Coefficients
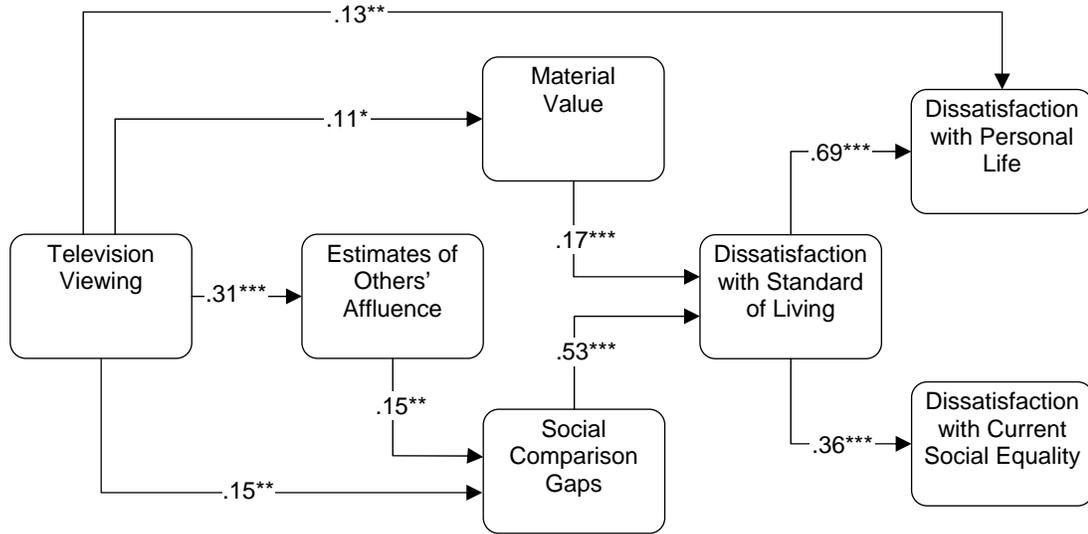
***p < .001, **p < .01, *p < .05, one-tailed

Multiple Group Analysis of Low- and High-Income Groups

RQ1 explores if the pattern of the hypothesized path model is invariant over low-and high-income groups, speculating individual income levels as an important moderator in the model. To answer RQ1, a multiple group analysis was performed because using multiple group analysis in structural equation modeling makes it possible to examine whether the relationships among variables are similar for multiple subgroups of a sample.

Division of groups. The easiest way of dividing respondents into low- and high-income groups may be splitting people in accordance with household income they reported. However, it should be noted that a ten-person household with annual income of $50,000 cannot be considered to have a similar level of standard of living to a two-person household with the same amount of income. Consistent with this line of reasoning, various equivalence scales have been developed to adjust household income according to the size and composition of the household, particularly among researchers who are

interested in measurement issues in income inequality (for details, see Atkinson &

Bourguignon, 2000; Buhmann, Rainwater, Schmaus, & Smeeding, 1998; Coulter, Cowell,

& Jenkins, 1992). In the present study, the OECD equivalence scale was used to adjust

household income for household size and composition. To be specific, the scale attaches

a weight of 1.0 to the head of household, 0.7 for each additional member of the

household, and 0.5 for each child under the age of 18. The adjusted household income

was then obtained by dividing household income by the number of adult equivalents.

Adjusted Individual Income
$$= \text{Annual Household Income}/ [1 + \{(N_a\text{-}1) \times 0.7\} + (N_c \times 0.5)]$$

N_a: Number of Adults in the Household
N_c: Number of Children in the Household (Aged < 18)

Before calculating each respondent's adjusted individual income, the original

household income measure was converted to a continuous measure because the original

household income question was a discrete measure with values 1 (less than $15,000) to 9

(More than or equal to $200,000). (For specific categories, see Table 6.) All respondents

in one category were given the median value of the category for their household income.

For example, respondents who reported household income of $25,000-$34,999 were

considered to have household income of $30,000. An income level of $250,000 was

assumed for the last category ($200,000 and over), and an income level of $7,500 was

given for the first category level ($15,000 or less).

Table 6. Demographic Characteristics of the Low- and High-Income Groups

Variable	Low-Income (n = 110)	High-Income (n = 115)
Gender		
Men	49	62
Women	61	53
Age		
18-24	16	7
25-34	40	23
35-44	21	25
45-54	19	32
55-64	9	19
65 or Over	5	9
M	37.36	44.19
SD	13.60	13.55
Race		
White/Caucasian	102	108
African American	4	2
Latino/Hispanic	1	4
Other	3	1
Education Level		
High School Graduate	29	13
Attended Some College	15	10
Associate Degree	6	9
Bachelors Degree	36	33
Post-College Graduate	24	50
Marital Status		
Couple, Married	55	76
Couple, Cohabiting	5	8
Single, Never Married	36	23
Single, Separated or Divorced	13	7
Single, Widowed	1	1
Adjusted Individual Income [a]		
M	20,514	66,632
SD	8,451	33,969
Number of Adults in Household		
M	2.07	1.94
SD	0.82	0.68
Number of Children in Household		
M	0.76	0.59
SD	1.01	0.98

Note. [a] Annual Household Income/ $[1 + \{(N_a-1) \times 0.7\} + (N_c \times 0.5)]$ (N_a: Number of Adults in the Household, $N_c \times$: Number of Children in the Household)

The median value for the adjusted individual level income was $36,765, and a median split method was used to divide people into two groups. Specifically, respondents with adjusted individual income less than $36,765 were classified as a low-income group (n = 110), whereas those with adjusted income of $36,765 and over were classified as a high-income group (n = 115). The calculated mean value of adjusted individual income for the low-income group was $20,514 ($SD$ = 8,451); that for the high-income group was $66,632 ($SD$ = 33,969). An independent-samples t-test demonstrated that there was a significant difference in the adjusted individual income between the two groups, $t(222)$ = 13.03, $p < .001$. Demographic characteristics of both the low- and high-income groups are reported in Table 6, including gender, age, race, education level, marital status, etc.

Reported in the middle of Table 7 are statistics of main measures for the low- and high-income groups. Concerning weekly television viewing, no statistically significant differences were found between the two groups (Low-Income: M = 22.42, SD = 13.27; High-Income: M = 20.68, SD = 11.66; $t[223]$ = 1.19, p = .30). Also for the measure of material value, the two groups revealed no differences, (Low-Income: M = 3.25, SD = 1.27; High-Income: M = 3.16, SD = 1.19; $t[223]$ = 1.62, p = .61). For all other measures, the low-income group reported higher levels of responses than did the high-income group, with all the differences being statistically significant. For example, the low-income group reported higher estimates of others' affluence (Low-Income: M = 19.43, SD = 13.93; High-Income: M = 15.71, SD = 11.74; $t[223]$ = 2.17, $p < .05$), higher levels of perceived social comparison gaps (Low-Income: M = 4.25, SD = 1.27; High-Income: M = 2.90, SD = 1.19; $t[223]$ = 8.20, $p < .001$) and higher levels of telic comparison gaps (Low-Income: M = 4.51, SD = 1.40; High-Income: M = 2.90, SD = 1.25; $t[223]$ = 9.12, p

< .001). Not surprisingly, the low-income group also reported higher levels of

dissatisfaction with standard of living (Low-Income: $M = 3.49$, $SD = 1.25$; High-Income:

$M = 2.49$, $SD = 1.05$; $t[223] = 6.47$, $p < .001$), higher level of dissatisfaction with

personal life (Low-Income: $M = 3.06$, $SD = 1.18$; High-Income: $M = 2.45$, $SD = .95$;

$t[223] = 4.24$, $p < .001$), and higher levels of dissatisfaction with current social equality

(Low-Income: $M = 4.48$, $SD = 1.06$; High-Income: $M = 3.93$, $SD = 1.04$; $t[223] = 3.94$, p

< .001).

Path differences between groups. Multiple group analysis involves testing the

equality of beta-weights in two groups. A model is first tested in which a beta-weight is

estimated freely in the two groups. Consequently, a second model is tested in which the

beta-weight has been constrained to be equal in the two groups. The χ^2 difference

between the two models (i.e., unconstrained vs. constrained) is examined for the

statistical test of the equality of the two beta-weights. If the relative fit of the constrained

model is much worse than that of the unconstrained model (i.e., the χ^2 difference is

statistically significant), the researcher can conclude that the difference between the two

beta-weights is statistically significant. However, if the fit is similar for both models (i.e.,

the χ^2 difference is not statistically significant), the researcher can conclude that the

difference between the two beta-weights is not statistically significant.

Because RQ1 explores possible differences in the overall path model between the

low- and high-income groups, instead of looking into a difference of a specific pair of

paths, all path coefficients were constrained. Reported in the bottom of Table 7 are

goodness of fit indices for both the unconstrained and the constrained models. The χ^2

difference between the two models was 6.26 (31.14 minus 24.88), and degrees of

freedom difference between the two models was 9 (31 minus 22), which was not statistically significant ($p > .05$), indicating the patterns of the two models are similar. Furthermore, values of all other goodness of fit indices such as the CFI, NNFI, and RMSEA are also similar between the two models, demonstrating again model direct effects do not significantly differ in pattern.

For further investigation of group differences, each group's path coefficients were examined separately. Both unstandardized and standardized forms of path coefficients are reported in Table 8. Unstandardized path coefficients are generally used for between-group comparisons for each path, whereas standardized path coefficients are usually used for the purpose of within-group comparisons. The standardized path coefficients for both groups are separately depicted in the path diagrams in Figures 6 and 7.

An inspection of the estimated path coefficients of the two groups reveals that results for the proposed direct effects of television viewing (i.e., paths that start from television viewing) are different across groups. The paths that hypothesized the effects of television viewing on dissatisfaction with personal life ($t = 2.45$, $p < .01$), material value ($t = 2.11$, $p < .05$), estimates of others' affluence ($t = 1.83$, $p < .05$), and social comparison gaps ($t = 2.22$, $p < .05$) were all confirmed for the low-income group at a one-tailed significance level of .05. On the other hand, no paths except one linking television viewing to estimates of others' estimates were confirmed for the high-income group at a one-tailed significance level of .05 (Television Viewing → Dissatisfaction with Personal Life: $t = 1.18$, $p = .12$; Television Viewing → Material Value: $t = .48$, $p = .31$; Television Viewing → Estimates of Others' Affluence: $t = 5.09$, $p < .001$; Television Viewing → Social Comparison Gaps: $t = 1.24$, $p = .11$).

Table 7. Evaluation of the Multiple Group Analysis

Correlations

Low-Income (n = 110)	1	2	3	4	5	6	7
1. Weekly Television Viewing	-						
2. Material Value	.20	-					
3. Estimates of Others' Affluence	.17	.10	-				
4. Social Comparison Gaps	.23	.12	.15	-			
5. Dissatisfaction with Standard of Living	.11	.25	.06	.43	-		
6. Dissatisfaction with Personal Life	.24	.28	.17	.40	.68	-	
7. Dissatisfaction with Current Social Equality	.01	.08	.03	.20	.33	.38	-

High-Income (n = 115)	1	2	3	4	5	6	7
1. Weekly Television Viewing	-						
2. Material Value	.05	-					
3. Estimates of Others' Affluence	.43	.10	-				
4. Social Comparison Gaps	.17	.01	.16	-			
5. Dissatisfaction with Standard of Living	.05	.19	-.05	.47	-		
6. Dissatisfaction with Personal Life	.12	.09	.05	.42	.68	-	
7. Dissatisfaction with Current Social Equality	-.07	-.06	.13	.02	.24	.30	-

Measure Differences

	Low-Income		High-Income		T-test
Variable	*M*	*SD*	*M*	*SD*	
1. Weekly Television Viewing	22.42	13.27	20.68	11.66	$p = .30$
2. Material Value	3.25	1.27	3.16	1.19	$p = .61$
3. Estimates of Others' Affluence	19.43	13.93	15.71	11.74	$p < .05$
4. Social Comparison Gaps	4.25	1.27	2.90	1.19	$p < .001$
5. Dissatisfaction with Standard of Living	3.49	1.25	2.49	1.05	$p < .001$
6. Dissatisfaction with Personal Life	3.06	1.18	2.45	.95	$p < .001$
7. Dissatisfaction with Current Social Equality	4.48	1.06	3.93	1.04	$p < .001$

Goodness of Fit Summary

Model	χ^2	df	*p*	CFI	NNFI	RMSEA
Unconstrained Model	24.88	22	.303	.989	.979	.024
Constrained Model	31.14	31	.459	.999	.999	.005

However, the differences between the two groups should be interpreted with some caveats. Although examination of estimated path coefficients revealed seemingly different path trends between the two groups, it may be reasonable to discount the differences for a few reasons. First, because goodness of fit indices including χ^2 difference statistics failed to show substantial differences between the unconstrained and constrained models, it is hard to conclude that the two groups significantly differ in terms of the relationships among variables. Furthermore, because the multiple group analysis increased the number of parameters but decreased the number of respondents analyzed by one model, the ratio of the number of respondents to the number of parameters approached a level in which using structural equation modeling should be reconsidered. Researchers point out that if the ratio of the number of respondents to the number of parameters is less than 5:1, using structural equation modeling may be problematic. Additionally, the ratio of 20:1 is usually considered desirable, and the ratio of 10:1 is considered as a realistic target (Bentler & Chou, 1987; Kline, 1998). In the initial model of the present study, the ratio of the number of respondents to the number of parameters fell within the realistic target (239:17 = 14.1:1). However, in the multiple group analysis, the ratio approached the questionable level of 5:1 (239:34 = 7.0:1).

Table 8. *Parameter Estimates for the Multiple Group Analysis*

Parameter	Low Income				High Income			
	Estimate[a]	S.E.	t	p	Estimate[a]	S.E.	t	p
Path Coefficients								
Weekly Television Viewing → Dissatisfaction with Personal Life	.016 (.176)	.006	2.624	.004	.008 (.099)	.005	1.488	.068
Weekly Television Viewing → Material Value	.019 (.198)	.009	2.114	.017	.005 (.045)	.010	.485	.314
Weekly Television Viewing → Estimates of Others' Affluence	.181 (.173)	.099	1.830	.034	.433 (.430)	.085	5.088	.000
Estimates of Others' Affluence → Social Comparison Gaps	.011 (.116)	.009	1.230	.109	.011 (.111)	.010	1.088	.138
Weekly Television Viewing → Social Comparison Gaps	.020 (.209)	.009	2.225	.013	.013 (.126)	.010	1.238	.108
Material Value → Dissatisfaction with Standard of Living	.193 (.197)	.083	2.322	.010	.163 (.186)	.071	2.298	.011
Social Comparison Gaps → Dissatisfaction with Standard of Living	.403 (.413)	.083	4.862	.000	.406 (.464)	.071	5.726	.000
Dissatisfaction with Standard of Living → Dissatisfaction with Personal Life	.626 (.656)	.066	9.534	.000	.615 (.676)	.062	9.971	.000
Dissatisfaction with Standard of Living → Dissatisfaction with Current Social Equality	.281 (.331)	.077	3.658	.000	.242 (.244)	.090	2.692	.004
Disturbance Variances								
D: Material Value	1.531 (.961)	.207	7.383	.000	1.407 (.998)	.186	7.549	.000
D: Estimates of Others' Affluence	186.7 (.970)	25.3	7.383	.000	111.4 (.815)	14.8	7.549	.000
D: Social Comparison Gaps	1.499 (.935)	.203	7.383	.000	1.357 (.960)	.180	7.549	.000
D: Dissatisfaction with Standard of Living	1.200 (.784)	.163	7.383	.000	.811 (.749)	.107	7.549	.000
D: Dissatisfaction with Personal Life	.707 (.508)	.096	7.383	.000	.466 (.521)	.062	7.549	.000
D: Dissatisfaction with Current Social Equality	.989 (.891)	.134	7.383	.000	1.001 (.940)	.133	7.549	.000
Disturbance Covariances								
D: Dissatisfaction with Standard of Living ↔ D: Dissatisfaction with Current Social Equality	.197 (.236)	.082	2.397	.017	.138 (.202)	.065	2.112	.035

Note. D, disturbance.

[a] Unstandardized (standardized). The standardized values for the disturbance variances are proportions of unexplained variance (1-R^2).

P-values for path coefficients reflect one-tailed tests.

Figure 6. Estimated Standard Path Coefficients of the Low-Income Group
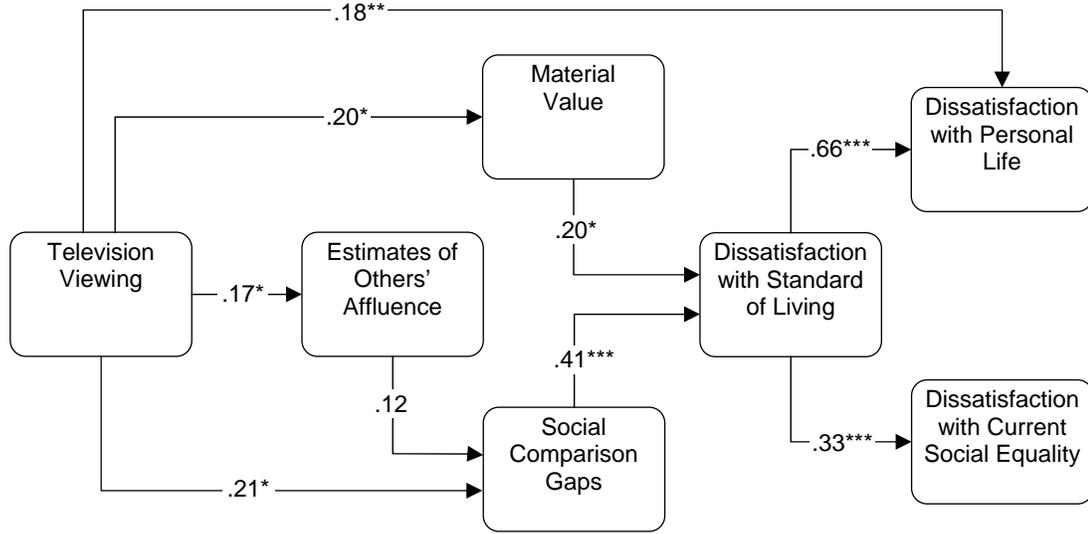
***p < .001, **p < .01, *p < .05, one-tailed

Figure 7. Estimated Standard Path Coefficients of the High-Income Group
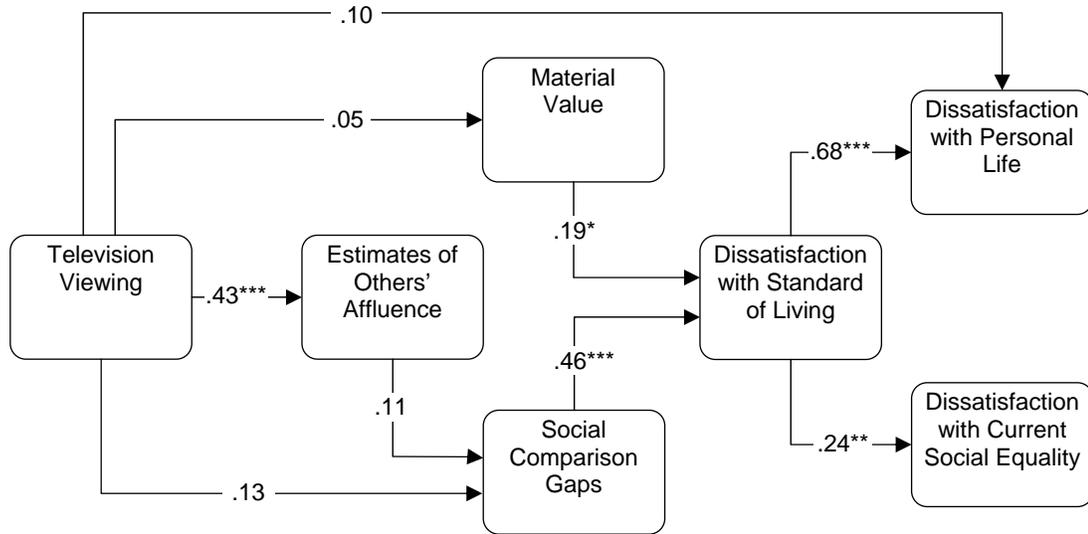
***p < .001, **p < .01, *p < .05, one-tailed

With all the caveats in mind, additional analyses were conducted to examine how individual paths may differ across the two groups. Because three paths were found to be significant for the low-income group but non-significant for the high-income group, a

series of multiple group analyses were conducted for the three paths (Television Viewing → Dissatisfaction with Personal Life, Television Viewing → Material Value, Television Viewing → Social Comparison Gaps). Each analysis constrained one pair of paths, with all other pairs of paths in the model being freely estimated. Reported in Table 9 are goodness of fit indices for the three constrained models. The χ^2 difference between the unconstrained model and each of the three constrained model is not significant, suggesting that none of the three paths is significantly different across the two groups.

Table 9. *Goodness of Fit Indices for Constrained Models*

Constrained Path	χ^2	df	p	CFI	NNFI	RMSEA
Unconstrained	24.88	22	.303	.989	.979	.024
Television Viewing → Dissatisfaction with Personal Life	25.78	23	.311	.990	.981	.023
Television Viewing → Material Value	26.07	23	.298	.988	.979	.024
Television Viewing → Social Comparison Gaps	25.15	23	.342	.992	.985	.020

The second research question in this study concerned the possible effects of demographic variables (e.g., age, gender, etc.). That is, the second research question attempted to investigate if introducing demographic variables into the hypothesized path model would reveal the effects of television viewing as spurious. To control the effects of demographic variables, age, gender, education level, and income level were included in the hypothesized path model as exogenous variables along with television viewing. Given that the original model hypothesized that television viewing would have direct effects on

four variables (i.e., Television Viewing → Dissatisfaction with Personal Life, Television Viewing → Material Value, Television Viewing → Estimates of Others' Affluence, Television Viewing → Social Comparison Gaps), this new model also allowed each of the demographic variables to have four direct effects on the four variables.

Since this analysis was exploratory rather than hypothesis-driven, path coefficients that were not significant at a one-tailed significance level of .05 were dropped from the model in such a way that the least significant path coefficient was removed one by one until remaining path coefficients were all significant ones. However the paths that were initially included in the original model were not subject to this elimination. Additionally, because the model included more than one exogenous variable, all exogenous variables were tentatively regarded as covariant with one another. Consequently, covariances among exogenous variables that were not significant at a two-tailed significance level of .05 were dropped from the model in such a way that the least significant covariance was removed until remaining covariances are all significant ones.

Table 10 reports correlations, distributional statistics, and goodness of fit indices of the path model with demographic control variables. The χ^2 for this model was significant, $\chi^2 (34) = 61.2$, $p < .01$. However, χ^2 is known to be sensitive to sample size, such that with a sample size of more than 100, even trivial deviations from a perfect model are statistically significant. For that reason, other fit indices were used to make judgments about model fit. Given the overall pattern of other fit indices (CFI = .95, NNFI = .92, RMSEA = .060), the fit of the model was judged to be acceptable.

Figure 8 illustrates the final model. After dropping all nonsignificant covariances among exogenous variables from the model, the final model contained four significant

covariances among exogenous variables (Age ↔ Television Viewing; Television Viewing ↔ Education; Age ↔ Income; and Income ↔ Education).

An inspection of the estimated path coefficients reveals that the direct effects of television viewing on satisfaction with personal life, material value, estimates of others' affluence, and social comparison gaps remained significant in spite of the introduction of the demographic variables into the model. However, the path linking estimates of others' affluence to social comparison gaps was not significant in this model.

The demographic variables introduced in this model showed some interesting results. Specifically, age was negatively associated with material value, while gender was associated with estimates of others' affluence such that females are more likely to amplify other people's affluence. Both income and education were negatively associated with both estimates of others affluence and social comparison gaps. Finally, lower education was associated with dissatisfaction with personal life.

Table 10. *Evaluation of the Path Model with Demographic Control Variables*

Correlations (N = 225)

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Weekly Television Viewing	-										
2. Age	.15	-									
3. Gender [a]	.11	-.11	-								
4. Income	-.04	.26	-.08	-							
5. Education	-.32	.08	-.11	.24	-						
6. Material Value	.13	-.25	.05	-.04	-.14	-					
7. Estimates of Others' Affluence	.29	-.11	.34	-.20	-.36	.11	-				
8. Social Comparison Gaps	.21	-.05	.11	-.50	-.30	.08	.21	-			
9. Dissatisfaction with Standard of Living	.10	-.17	.01	-.34	-.22	.39	.07	.55	-		
10. Dissatisfaction with Personal Life	.20	-.13	.00	-.24	-.26	.20	.16	.47	.71	-	
11. Dissatisfaction with Current Social Equality	-.01	-.17	.26	-.26	-.01	.02	.11	.22	.36	.39	-

Distributional Statistics

Variable	*M*	*SD*	Skew.	Kurt.	Min.	Max.
1. Weekly Television Viewing	21.53	12.47	.87	.81	.00	64.00
2. Age	40.85	13.97	.35	-.62	18	81
3. Gender [a]	1.51	.50	-.03	-2.02	0	1
4. Income	44,086	33,998	2.05	6.80	2,586	250,000
5. Education	4.48	1.50	-.60	-1.15	2	6
6. Material Value	3.21	1.23	.29	-.51	1.00	6.50
7. Estimates of Others' Affluence	17.53	12.97	.92	.10	1.13	53.75
8. Social Comparison Gaps	3.56	1.40	.24	-.39	1.00	7.00
9. Dissatisfaction with Standard of Living	2.98	1.25	.54	-.18	1.00	6.50
10. Dissatisfaction with Personal Life	2.75	1.11	.77	.35	1.00	6.20
11. Dissatisfaction with Current Social Equality	4.20	1.08	-.02	-.14	1.25	7.00

Goodness of Fit Summary

χ^2	df	p	CFI	NNFI	RMSEA
61.17	34	.003	.949	.918	.060

Note. [a] Males: 0, Females: 1

Figure 8. The Path Model with Demographic Control Variables
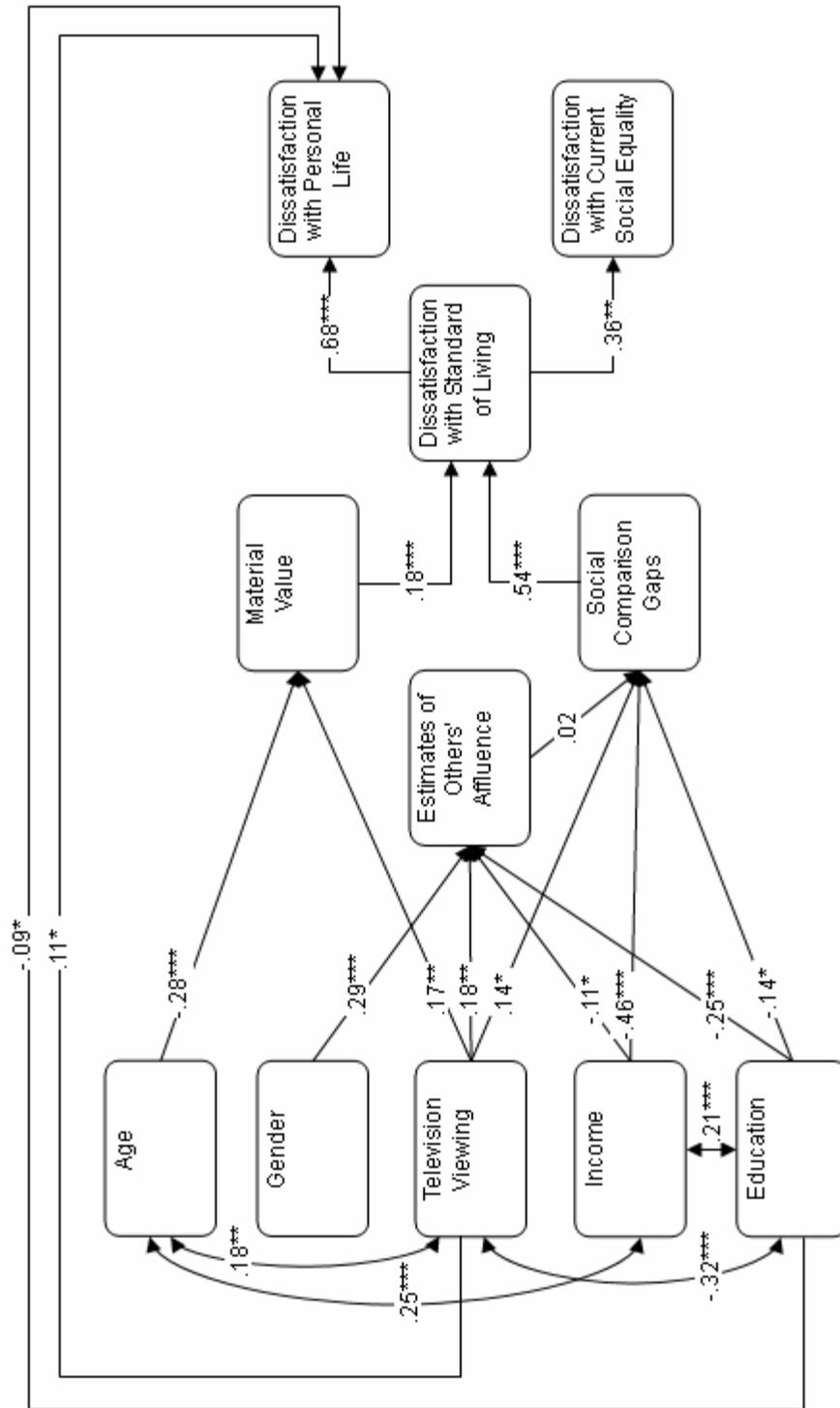
Note. P-values for path coefficients reflect one-tailed tests.
***p < .001, **p < .01, *p < .05, one-tailed

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The third research question in this study postulated that different program types may exert different effects on people's perceptions. To examine the effects of each program type, seven program-type variables were included, along with general television viewing, as exogenous variables in the hypothesized path model.

An examination of distributional statistics of program type variables revealed non-normal distributions among most of the measures such as news viewing, soap opera viewing, game show viewing, and music/celebrity show viewing. One way to deal with a non-normal univariate distribution is transforming the original scores with a mathematical operation to new scores that may have a more normal distribution. Because program type measures were usually positively skewed due to many 0 (zero) responses, a square root transformation was performed for all of the seven program type measures. Reported in the middle of Table 11 are distributional statistics of the program type variables, which shows that the square root formation greatly enhanced normality of these variables. As judged from suggested skewness and kurtosis guidelines (e.g., Chou & Bentler, 1995; Hu, Bentler, & Kano, 1992; Kline, 1998; West, Finch, & Curran, 1995), all transformed measures showed a normal distribution, with only one measure (i.e., soap opera viewing) being of marginal concern (Skewness: 3.82, Kurtosis: 14.35).

Like in the previous analysis for the second research question, given that general television viewing was originally hypothesized to have direct effects on four variables (i.e., Television Viewing → Dissatisfaction with Personal Life, Television Viewing → Material Value, Television Viewing → Estimates of Others' Affluence, Television Viewing → Social Comparison Gaps), this new model also allowed each of the program type variables to have four direct effects on the four variables. Consequently, path

coefficients that were not significant at a one-tailed significance level of .05 were dropped from the model in such a way that the least significant path coefficient was removed one by one until remaining path coefficients were all significant ones. In addition, all exogenous variables were tentatively regarded as covariant with one another, and covariances among exogenous variables that were not significant at a two-tailed significance level of .05 were dropped from the model in such a way that the least significant covariance is removed until remaining covariances are all significant ones.

Reported in Table 11 are correlations among variables and goodness of fit indices of the path model with program type variables. Given the χ^2 for this model (χ^2 [59] = 63.93) and the overall pattern of other fit indices (CFI = .99, NNFI = .99, RMSEA = .019), the fit of the model was judged to be acceptable.

Figure 9 represents the final model. An inspection of the estimated path coefficients shows that the direct effects of general television viewing on satisfaction with personal life, material value, estimates of others' affluence, and social comparison gaps remained significant in spite of the introduction of the program type variables into the model. The effects of specific program types appeared in part for soap opera viewing and music/celebrity show viewing, with both being positively associated with estimates of others' affluence. Interestingly, news viewing was negatively associated with both material value and social comparison gaps.

Further investigation was performed to explore if the effects of soap operas, music/celebrity shows, and news can be verified. Because viewing of specific program types is likely to covary with demographic variables such as gender, age, etc., it was decided to control such demographic variables. Support for the effects of a specific

program type would be evidenced by a significant partial correlation coefficient when relevant demographic variables are controlled. A partial correlation analysis revealed that introduction of gender, age, education level, and income level of respondents as control variables never eliminated the initial significant association between soap opera viewing and estimates of others' affluence ($pr = .19$, $p < .01$, one-tailed). The association between music/celebrity show viewing and estimates of others' affluence also remained significant when the demographic variables were controlled ($pr = .17$, $p < .01$, one-tailed). News viewing showed mixed results. The control revealed the significant association between new viewing and materialism to be spurious ($pr = -.05$, $p = .25$, one-tailed), whereas the association between news viewing and social comparison gaps remained significant after the control ($pr = -.13$, $p < .05$, one-tailed). In sum, soap operas and music/celebrity shows were found to be significantly and positively connected with estimates of others' affluence, whereas television news was found to be significantly and negatively associated with social comparison gaps.

Table 11. *Evaluation of the Path Model with Program Types as Exogenous Variables*

Correlations (N = 239)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. General Television Viewing	-													
2. Movie Viewing	.38	-												
3. Drama Viewing	.35	.15	-											
4. Sitcom/Comedy Viewing	.33	.28	.42	-										
5. News Viewing	.30	.00	.11	-.03	-									
6. Soap Opera Viewing	.18	.09	.10	.22	-.01	-								
7. Music/Celebrity Show Viewing	.31	.14	.15	.13	.03	.11	-							
8. Game Show Viewing	.36	.17	.27	.18	.09	.09	.25	-						
9. Material Value	.11	.13	-.05	.16	-.17	.00	.06	.09	-					
10. Estimates of Others' Affluence	.31	.12	.08	.11	.01	.25	.21	.17	.14	-				
11. Social Comparison Gaps	.20	.06	.01	.04	-.16	.03	.01	.10	.08	.20	-			
12. Dissatisfaction with Standard of Living	.08	.09	.01	.14	-.15	.05	.03	.10	.21	.05	.54	-		
13. Dissatisfaction with Personal Life	.17	.11	.03	.05	-.16	.04	.01	.03	.19	.12	.44	.71	-	
14. Dissatisfaction with Current Social Equality	-.05	.04	.03	.05	-.13	.05	.12	.11	.01	.08	.20	.36	.39	-

Distributional Statistics

Variable	M [a]	SD [a]	Skew. [a]	Kurt. [a]	Min. [a]	Max. [a]
1. General Television Viewing	21.70	12.55	.85	.64	.00	64.00
2. Movie Viewing	1.44(3.25)	1.08(3.84)	.33(2.27)	-.15 (7.33)	.00(.00)	5.00(25.0)
3. Drama Viewing	.96(2.02)	1.05(3.09)	.76(2.46)	-.24 (8.07)	.00(.00)	4.58(21.0)
4. Sitcom/Comedy Viewing	1.00(1.86)	.93(2.53)	.55(2.19)	-.43 (6.10)	.00(.00)	4.00(16.0)
5. News Viewing	1.77(4.20)	1.04(4.36)	.31(3.05)	.78(18.92)	.00(.00)	6.32(40.0)
6. Soap Opera Viewing	.16 (.37)	.59(1.57)	3.82(5.32)	14.35(31.61)	.00(.00)	3.46(12.0)
7. Music/Celebrity Show Viewing	.41 (.73)	.75(1.74)	1.78(3.66)	2.48(16.96)	.00(.00)	3.61(13.0)
8. Game Show Viewing	.36 (.65)	.72(1.80)	2.18(4.59)	4.72(26.42)	.00(.00)	3.87(15.0)
9. Material Value	3.21	1.24	.30	-.52	1.00	6.50
10. Estimates of Others' Affluence	17.88	13.21	.94	.22	1.13	61.25
11. Social Comparison Gaps	3.52	1.39	.27	-.37	1.00	7.00
12. Dissatisfaction with Standard of Living	2.95	1.23	.57	-.11	1.00	6.50
13. Dissatisfaction with Personal Life	2.74	1.09	.76	.39	1.00	6.20
14. Dissatisfaction with Current Social Equality	4.20	1.07	-.02	-.17	1.25	7.00

Goodness of Fit Summary

χ^2	df	p	CFI	NNFI	RMSEA
63.93	59	.308	.992	.987	.019

Note. [a] Values in parentheses indicate original values prior to a square root transformation.

Figure 9. The Path Model with Program Types as Exogenous Variables
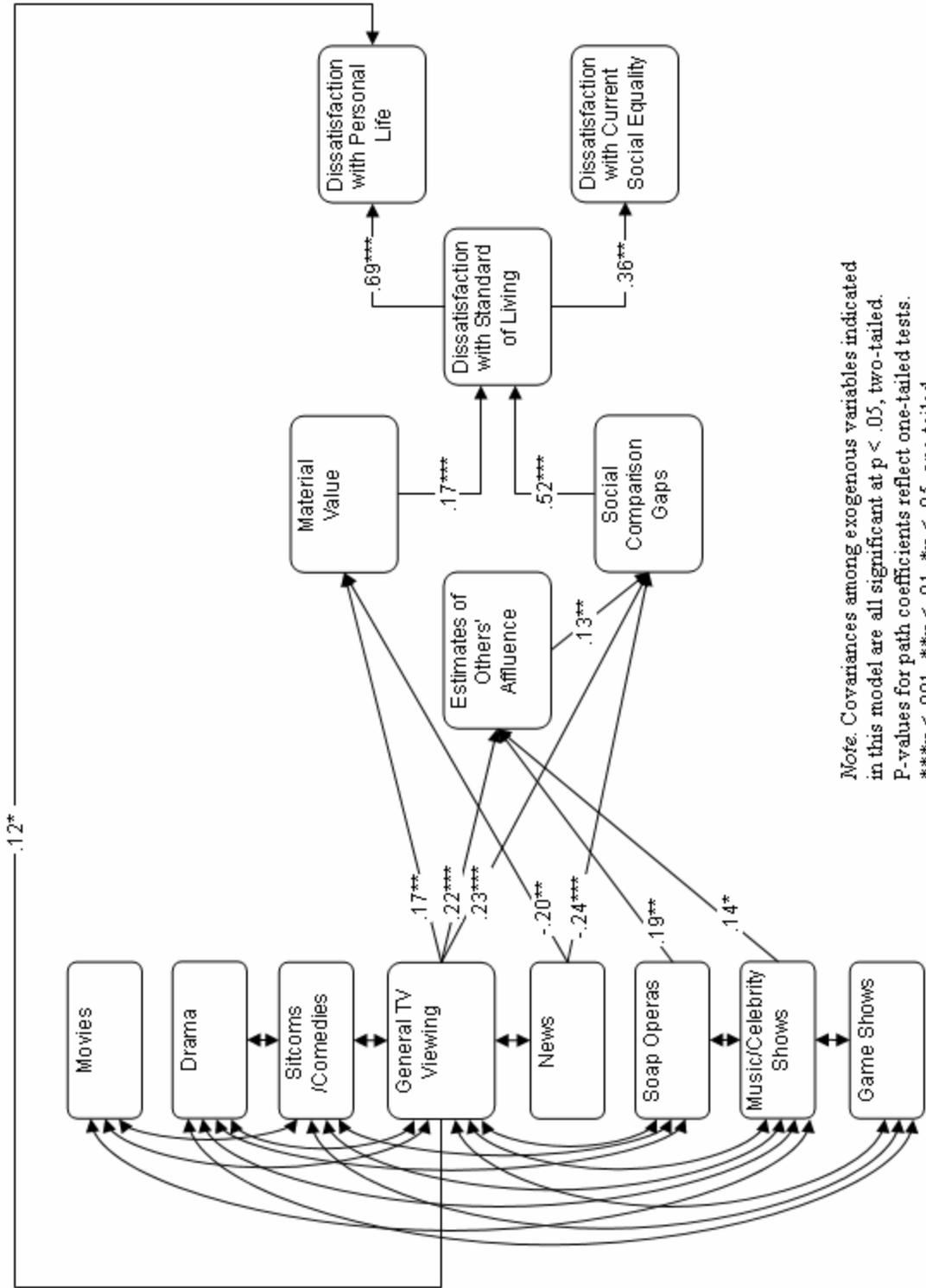
Note. Covariances among exogenous variables indicated in this model are all significant at p < .05, two-tailed. P-values for path coefficients reflect one-tailed tests.
****p < .001, **p < .01, *p < .05, one-tailed

Discussion

Summary of Findings

This study explored the ways television viewing may have adverse effects on individuals' subjective well-being. In particular, this study attempted to develop a path model that incorporates some theoretical perspectives or psychological mechanisms that are believed to link television viewing to decreases in subjective well-being. Specifically, this study employed a cultivation perspective that repeated viewing of biased images and representations of wealth may promote material values among viewers. Second, this study explored another cultivation idea that repeated exposure to biased images and representations of wealth may result in distorted reality judgments that people in the U.S. are more wealthy than may actually be the case. Third, this study proposed that television viewing may trigger frequent upward social comparisons with other people in terms of wealth among many individuals. Finally, this paper examined the ways aforementioned cultivations and social comparisons reduce one's satisfaction with his or her current standard of living, satisfaction with personal life in general, and satisfaction with the status quo of society pertaining to social equality.

In general, the survey data revealed that television viewing may influence the ways an individual perceives of his or her own life and society, and both cultivation and social comparison perspectives may provide meaningful mediating mechanisms that account for the negative association between television viewing and perceptions of personal life and society.

More specifically, the data showed that television viewing may heighten an individual's material value, and the heightened material value may lead to feelings of

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dissatisfaction with standard of living, and subsequently dissatisfaction with personal life and current social equality. The data also indicated that television viewing may cause an individual to compare his or her current material situation with others' situations, and perceived discrepancies due to the comparisons may also culminate in dissatisfaction with standard of living, and subsequently dissatisfaction with personal life and current social equality.

Direct association between television viewing and personal life satisfaction. Research has shown that television viewing frequently results in direct, negative outcomes in viewers' subjective well-being. The data in the present study is consistent with the previous findings. That is, one's amount of television viewing in general was negatively associated with satisfaction with personal life. It is worth noting that the negative association between television viewing and satisfaction with personal life remained significant even after controlling for a variety of demographic variables that many critics of cultivation research suggested as potential variables that may reduce or even eliminate cultivation effects. Although the control variables introduced in this study are not exhaustive in covering all possible alternative explanations, this result may indicate that television viewing in general plays a pivotal role in individuals' subjective well-being.

However, one interesting finding is that the negative association between television viewing and satisfaction with personal life was salient among individuals with low income levels. Given this result, it may be appropriate to conclude that real-life experiences of relatively deprived social members may "resonate" with television portrayals of wealth. That is, individuals with relatively low standards of living in society

may experience frequently the feelings of relative deprivation in their everyday lives, and the feelings of relative deprivation may be more intensified when they are repeatedly exposed to materially comfortable lives of people on television.

Television viewing, materialism, and life satisfaction. Previous research has often introduced materialism as a mediator that is believed to connect television viewing to subjective well-being. The present study predicted that materialism would play an important role as a mediator cultivated by television and affecting subjective well-being. Consistent with previous findings, the data of the present study evidenced that materialism was positively associated with television viewing and negatively associated with satisfaction with standard of living, and that the satisfaction with standard of living affected by materialism in turn influenced both satisfaction with personal life and satisfaction with current social equality.

It is notable that when respondents were divided into low- and high-income groups, the significant association between television viewing and materialism was not significant for the high-income group. This result suggests that distorted images and representations of wealth on television may amplify individuals' materialism particularly among underprivileged social members. In contrast, materialism is not likely to be inflated as a result of television viewing among privileged social members. This finding is quite consistent with Pingree and Hawkins' (1990) theoretical argument that second-order cultivation effects (e.g., materialism) are frequently confined to one population subgroup or even reversed for two different subgroups.

Some details are also worth describing with regard to the relationships between materialism and satisfaction measures. Although previous research has shown that

individuals' life satisfaction is directly affected by their level of materialism, the data in this study suggest that materialism may not be directly connected to claims of dissatisfaction with personal life or with dissatisfaction with current social equality. Rather, individuals' satisfaction with standard of living may be an important mediator between materialism and life satisfaction. In other words, materialism may trigger dissatisfaction with standard of living, and the dissatisfaction with standard of living in turn elicits both dissatisfaction with personal life and dissatisfaction with current social equality.

Television viewing, social comparison, and life satisfaction. Noting that existing research has examined only materialism as a mediating mechanism that can explain the relationship between television viewing and subjective well-being, the present study proposed that other psychological mechanisms may also well explain the relationship, such as another aspect of cultivation (i.e., estimation of others' affluence) and a social comparison perspective. The data in the present study strongly supported this expectation. Television viewing was found to lead to perceived gaps between the self and others in affluence, and the social comparison gaps were found to be negatively associated with satisfaction with standard of living. Consequently, the satisfaction with standard of living affected by social comparison gaps was found to influence both satisfaction with personal life and satisfaction with current social equality.

Additionally, the data showed that one's amplified estimation of others' affluence, which is cultivated by television viewing, may be related to the perceived gaps between the self and others, suggesting that the perceived social comparison gaps may be not only

directly associated with television viewing per se, but the gaps may be also indirectly associated with television viewing mediated by estimates of others' affluence.

Some details are also worth describing with regard to the relationships between social comparison gaps and satisfaction measures. The data in this study suggest that social comparison gaps may not be directly connected to claims of dissatisfaction with personal life or dissatisfaction with current social equality. Rather, individuals' satisfaction with standard of living may be an important mediator between social comparison gaps and life satisfaction. In other words, the perceived comparison gaps between the self and others may trigger dissatisfaction with standard of living, and the dissatisfaction with standard of living in turn elicits both dissatisfaction with personal life and dissatisfaction with current social equality.

It is notable that when respondents were divided into low- and high-income groups, the significant association between television viewing and social comparison gaps was not significant for the high-income group. This result suggests that distorted images and representations of wealth on television may increase the perceived gaps between the self and others particularly among underprivileged social members. In contrast, the perceived gaps are not likely to be inflated as a result of television viewing among privileged social members.

Theoretical Implications

Comprehensive picture of television viewing and subjective well-being. There has been little effort made to investigate theoretical, mediating mechanisms that can explain the relationship between television viewing and subjective well-being. In this regard, the

foremost implication of this study may relate to the fact that this study attempted to develop a comprehensive path model in which the ways television viewing may negatively influence individuals' subjective well-being can be explored. The path model incorporated theory-driven mediators that were believed to have potential to help infer the causal relationship between television viewing and subjective well-being and make it hard to explore the issue from other causal perspectives.

One of the psychological mechanisms hypothesized in the model was cultivation. Specifically, this study incorporated both a first-order cultivation effect and a second-order cultivation effect in dealing with one issue, which is a technique infrequently employed in cultivation studies. The findings of this study suggest that the first-order cultivation effect (i.e., amplified estimation of others' affluence) may provide more convincing evidence for the issue of television viewing and subjective well-being in that television viewing was found to be significantly associated with this first-order social reality belief across the low- and high-income groups, whereas television viewing was associated with the second-order social reality belief (i.e., materialism) only among the low-income group. This result seems to reflect Hawkins and Pingree's (1990) argument that the relationships between television viewing and second-order beliefs are often weaker than those for first-order beliefs.

Another psychological mechanism examined in the path model was social comparison. This study proposed that television may provide images and information that may trigger upward social comparisons. Furthermore, this study supposed that first-order cultivation effects may, in part, mediate (or strengthen) the relationship between television viewing and social comparison, contending that there has been little empirical

evidence sought concerning the possible combination of cultivation and social comparison perspectives. The findings of this study suggest that television viewing may lead individuals to make upward social comparisons with better-off people, and particularly among underprivileged social members. This study also suggests that the upward social comparisons may be triggered also by first-order social reality beliefs (i.e., beliefs that other people are more wealthy than they actually are), which implies that social comparison may be an important corollary of some cultivation effects, particularly of first-order cultivation.

An additional theoretical implication of this research can be found in the concept of subjective well-being. The concept in previous research has usually been confined to satisfaction with personal life. However, this study predicted that television viewing may provoke fraternalistic deprivation (i.e., feelings of relative deprivation as a group member) as well as egoistic deprivation (i.e., feelings of relative deprivation as an individual), and that experiences of fraternalistic deprivation may be captured by measuring one's degree of satisfaction with current social equality, whereas egoistic deprivation may be measured by one's degree of satisfaction with personal life. The findings of this study suggest that distorted social realty on television may make many of social members perceive their standard of living less satisfactory, and these feelings of relative deprivation may provoke claims of dissatisfaction with society as well as claims of dissatisfaction with personal life.

Investigation of demographic factors and program types. In addition to exploring the effects of general television viewing, this study employed some exploratory research questions to investigate possible effects of demographic variables and specific television

program types. These research questions were developed to reflect some of the main criticisms of cultivation research. In general, the findings of this study suggest that general television viewing is an important variable that may have direct influence on material value, estimation of others' affluence, social comparison gaps, as well as satisfaction with personal life, even after controlling for demographic variables such as gender, age, income level, and education level. This result provides counter-evidence to the criticism that cultivation effects of television may be spurious ones that can be attributable to common background characteristics such as demographic variables (Hirsch, 1980; Hughes, 1980).

The findings of this study also suggest that, at least within the context of subjective well-being, general television viewing may be a better predictor than viewing of specific program types. Although some researchers propose that breakdowns of television viewing by content type are more useful than general television viewing (Hawkins & Pingree, 1981), the findings of this study suggest that the classical measure of total television viewing may be better in more comprehensively explaining the effects of television on subjective viewing.

These findings may imply that individuals' subjective well-being might be influenced by viewing of commercials as well as viewing of television programs in that one's amount of commercial viewing may be directly proportional to his or her amount of television viewing in general, and vice versa. Advertising is, by nature, designed to arouse desires for products and services by spreading the idea that enjoyment of products and services is one of important, desirable aspects of human life. Consequently, the

detrimental effects of television on individuals' subjective well-being might be understood in part as effects that repeated exposure to advertising may bring about.

In spite of the importance of general television viewing found in this study, some interesting findings are notable with regard to the effects of specific program types. This study suggests that viewing of soap opera may cultivate amplified estimates of others' affluence, which is consistent with the finding of O'Guinn and Shrum's (1997) study. In addition, although Carlson's (1993) study found significant associations between viewing of news programming and situation comedies and amplified estimation of others' affluence, this study failed to replicate the result. However, the present study proposes that viewing of music/celebrity shows may also amplify the estimation. Although music/celebrity shows have rarely been investigated as a program type in cultivation, the lives of celebrities depicted on television seem to lead to distorted estimation about wealth among individuals. Finally, the effect of news programming on social comparison gaps is notable. The viewing of news programming, unlike television viewing in general, was found to reduce perceived comparison gaps between the self and others in terms of wealth. Considering that the content of contemporary news programming is packed with outrageous crimes that are frequently reported to be committed by underprivileged social classes, it is not difficult to conceive that news programming may be a good source of information by which many viewers may experience downward social comparisons.

Toward a more general model of television viewing and subjective well-being. The primary focus of this study is that heavy viewing of affluent media realities may have adverse effects on individuals' subjective well-being. Although this study started with a concern about the distorted representations of *wealth* by the media, many different

aspects of media representations may be connected to decreases in subjective well-being. For example, as the body image disturbance research has evidenced, the distorted representations of *beauty* by the media may also culminate in decreased subjective well-being among media users. The underlying idea of both the present study and the body image disturbance research relates to concerns about over-idealized media representations.

Therefore, it may be theoretically promising work to develop a more general model that is capable of accounting for more diverse and general contexts where television viewing and subjective well-being are associated, beyond the issue of wealth per se. Figure 10 represents the generic path model of television viewing and subjective well-being. It is expected that this generic path model can provide a useful framework for diverse research issues that involve the effects of distorted social realities presented by the media.

For example, if this model is applied to the body image disturbance research, media use (e.g., health magazine reading or commercial watching) is expected to be associated with values concerning beauty (e.g., beliefs that women must be thin to be beautiful), distorted estimation (e.g., beliefs that women who weigh less than 110 pounds are more than 50% of the population), and social comparison gaps (e.g., perceptions that I am overweight compared with other people). Consequently, one's values concerning beauty and social comparison gaps are considered to lead to negative self-perception (e.g., lower self-esteem) and dissatisfaction with life. Additionally, it may be feasible to replace the final endogenous variable (i.e., dissatisfaction with life) with one other variable or a set

of variables reflective of various aspects of subjective well-being, including emotional or

behavioral outcomes (e.g., depression, eating disorder symptom, etc.)

Figure 10. Generic Path Model of Television Viewing and Subjective Well-Being
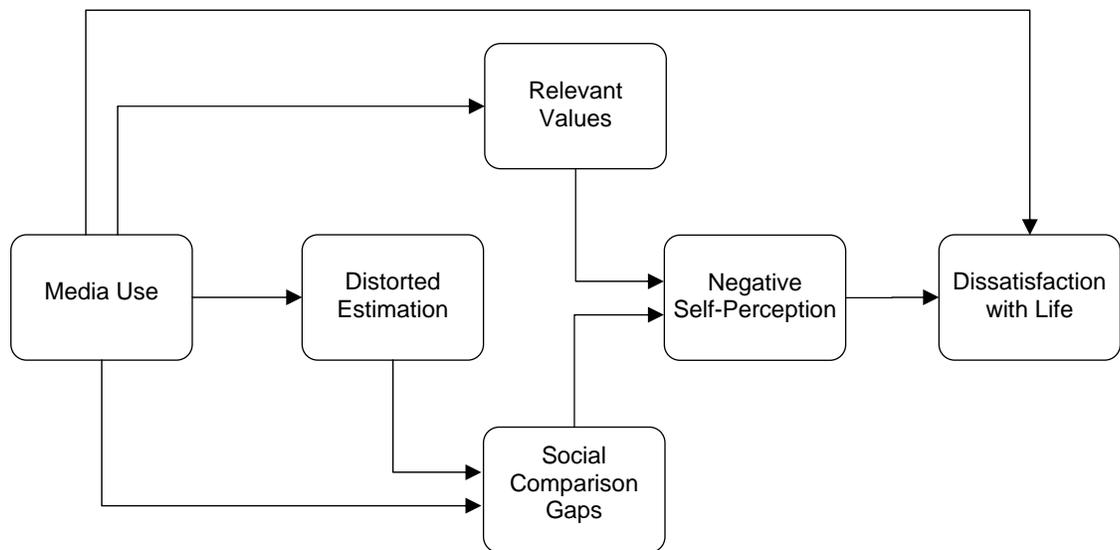
Limitations and Suggestions for Future Research

 Unexplored realm by the path model. In spite of the above implications, it is

important to acknowledge the limitations associated with the present study that suggest

additional avenues for future work in this area. The first concern relates to the fact that

the scope covered by the hypothesized path model developed in this study is quite

limited, considering a variety of outcomes that may result from television viewing. The

hypothesized model is just one of countless, feasible models that can explain the ways

individuals' subjective well-being is negatively affected by television viewing. That is,

although this study tried to explore a wide range of cultivation effects by employing two

different social reality beliefs that are believed to be cultivated by television viewing (i.e.,

estimation of others' affluence and materialism), other cultivation effects, in addition to these two aspects, might mediate television viewing and subjective well-being. For example, how one's moral values (Cheung & Chan, 1996) may be associated with television viewing and subjective well-being. Future research may want to uncover such social reality beliefs.

The same logic may be applied to the scope of social comparison examined in this study. Upward comparison is only a half of the whole story of social comparison. Television viewing may invoke not only upward social comparisons but also downward social comparisons. Although television images and representations are weighed toward privileged social classes, there are still relatively disadvantaged social classes depicted in the medium. That is, there are possibilities that individuals may experience downward social comparisons with people on television who are seen to be worse off. In particular, given that television viewing is a dynamic activity in which viewers' motivations and viewpoints are involved, individuals may deliberately seek downward social comparisons while or as a consequence of television viewing. Therefore, a more comprehensive picture could be captured by future research with regard to a variety of aspects of social comparisons that television viewing may cause.

On the other hand, although this study examined negative psychological outcomes of upward social comparisons, there may be some situations in which upward social comparisons could result in positive psychological outcomes. For example, Smith (2000) categorized diverse emotions that upward and downward social comparisons may bring about, and listed optimism, inspiration, and admiration as positive upward comparison emotions, and depression, shame, envy, and resentment, as negative upward comparison

emotions. Consistent with this line of reasoning, research has shown that viewers could draw inspiration or optimistic expectations from better-off others when the viewers' standing on the comparison dimension is changeable and controllable (Buunk, Collins, Taylor, & Van Yperen, 1990; Collins, 1996; Lockwood & Kunda, 1997; Major, Testa, & Bylsma, 1991). Therefore, future research may want to develop a more comprehensive framework that can take into account possible positive outcomes of upward social comparisons.

It should be also acknowledged that the hypothesized path model cannot be free from the criticism that it lacks important moderators that could exist within the scope of the model. For example, some possible moderators may involve many personality factors or individual difference factors such as how sensitive an individual is to social comparison information (for frequently used measures, refer to Gibbons & Buunk, 1999; Lennox & Wolfe, 1984), how one considers material affluence as an important aspect of his or her life, how one judges about where the locus of control exists regarding their states of life quality, among others. Additionally, some variables may be also considered with regard to how one interprets television realities, such as how one accepts television contents as real (for discussion of this issue, refer to Potter, 1988), how much one becomes involved while viewing (for discussion of this issue, refer to Dominick, 1990; Rubin, Perse, Taylor, 1988), etc.

Causality. Although the hypothesized path model in this study tried to incorporate psychological, mediating process variables that are believed to help establish the causal relationship between television viewing and subjective well-being, the findings of this study should still be interpreted with caution regarding the direction of causality. In other

words, incorporating some mediators between two variables does not necessarily mean that the causal relationship between the two variables is guaranteed. Rather, although television viewing was assumed to be an exogenous variable in the hypothesized path model, it is possible to imagine that television viewing could serve as an endogenous variable in other contexts of research.

For example, people who have distorted reality judgments of others' affluence and/or material value may be more attracted to television consumption. In this regard, Hawkins and Pingree (1983) mention that there might be a reciprocal relationship between television viewing and a social realty. In addition, Kasser (2002) points out that materialistic, consumer-oriented people are more likely to expose themselves to the media, especially television shows and commercials. The same reasoning may be applied to the relationship between television viewing and subjective well-being. Individuals who are depressed and dissatisfied with their lives may be more likely to watch television than those who are happy and satisfied in that research reports that television viewing experience tends to lead to moderate cheerfulness and high relaxation (Csikszentmihalyi & Kubey, 1981). Finally, in terms of the relationship between social comparison and subjective well-being, although it is usually assumed that subjective well-being is determined by social comparisons, it is also possible to imagine the converse. That is, social comparisons may be influenced by one's state of subjective well-being because happy people may choose to use comparison standards that make them feel better about themselves (Diener & Fujita, 1997).

Sample. A number of concerns should also be addressed with regard to the nature of the sample employed in the study. Although a great deal of effort was made to secure

sufficient variability in several demographic variables, the respondents were selected based on the convenience sampling method, which may limit the generalization of the current findings.. In fact, an investigation of the sample reveals some biases in demographic variables. For example, an overwhelming majority of the sample was White, making it impossible to investigate how race contributes toward one's perceptions of life quality. In addition, the respondents of this study were rather wealthy and highly educated compared to the U.S. population generally.

All of these sample biases may stem in part from the characteristics of the area where the sample was selected. Although the geographical restriction of the data source is of great advantage in controlling for contextual variables that may involve values and perceptions of wealth (e.g., local economic conditions), it should be noted that the area selected for this study is a college town where many residents are affiliated with a large public university and where it is highly likely that the average quality of life is higher than that of the average U.S. towns of similar population sizes. Even if living in a prosperous area does not affect one's objective well-being, it might affect his or her subjective well-being. Therefore, sampling from other areas of the U.S. could obtain different results. Nationwide probability sampling methods could be the best way to capture a more generalizable picture concerning what television does to Americans' lives.

Additional suggestions. Along with all the previous limitations, future research may consider additional issues that were not examined in this study. For example, in exploring social comparison gaps as a possible outcome of television viewing, this study asked about respondents' comparisons with *abstract* others instead of comparisons with actual people on television (e.g., media characters). Goethals, Messick, and Allison (1991)

reported that there may be two different types of social comparisons: "realistic" social comparison and "constructive" social comparison. The former refers to "self-appraisal based on using and analyzing actual information about social reality," and the latter is defined as "self-appraisal based on 'in-the-head' social comparison based on guess, conjecture, or rationalization" about social reality that is often believed. Existing research on media effects on women's body image disturbance has usually based on the idea of realistic social comparison in that the measures have tended to ask outcomes of comparisons with media characters or models (e.g., "I compare my body to women's bodies in music videos" or "I think about how my body compares to television characters' bodies," Botta, 1999). Future research could examine how these two comparison modes are related to each other in the context of perceptions of wealth.

Finally, among a multitude of forms of the mass media, this study was interested mainly in the effects of television. Although some efforts were made to explore the possible effects of confounding variables such as demographic variables and viewing of specific program types, this study did not examine to how other media may have negative or positive effects on users' subjective well-being. Therefore, the effects of other media (e.g., magazines, newspapers, etc.) on the perceived quality of life are worth further investigation, in particular compared with the effects of television viewing. Additionally, although one's amount of commercial viewing may be directly proportional to his or her amount of television viewing in general, future research could employ a measure of advertising consumption to understand possible effects of advertising per se, which might be different from the effects of television viewing.

Final Remarks: Concerns about Current Media

In spite of all the above limitations, however, the overall findings of this study raise some concerns about current television portrayals of wealth. The television industry, like the media industry in general, usually generates its profits from advertising revenues. This situation may possibly encourage television practitioners to produce programs that can attract consumers with the greatest purchasing power. Thus, as many critics of television argue, television in contemporary society appears to function as a conservative socializing agent that maintains and propagates values and symbols that are believed to be adored by high class citizens. This may be why those who are underprivileged and in need are not considered to be a favored audience. They are covered only when their lives are involved in outrageous behaviors such as crimes and violence that disturb the "peaceful and prosperous" world. Furthermore, the wretched lives of underprivileged social classes are frequently ridiculed on television unwittingly or even knowingly. The inferior standard of living they experience is often attributed to their problematic personality or nature (e.g., laziness, disinclination to work, etc.), which can result in blaming the victims.

Considering the way the television industry is funded, it may be unreasonable to expect much change in the near future. However, television practitioners could reconsider selling over-idealized realities pertaining to affluence, in that repeated and cumulative exposure to the biased realities on television may influence feelings of relative deprivation among viewers. In addition, it is desirable for television practitioners to make efforts to find other values that can both attract audiences and be respected by audiences.

Without doubt, it is also desirable to make efforts to increase unstereotyped stories of underprivileged social classes who are striving hard to get ahead.

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Appendix A: Measures

Materialism

1. I admire people who own expensive homes, cars, and clothes.
2. The things I own say a lot about how well I'm doing in life.
3. Buying things gives me a lot of pleasure.
4. I like a lot of luxury in my life.
5. My life would be better if I owned certain things I don't have.
6. I'd be happier if I could afford to buy more things.

Estimates of Others' Affluence

1. I guess _____ % of American households have swimming pools.
2. I guess _____ % of American households own yachts.
3. I guess _____ % of American households own Jacuzzis.
4. I guess _____ % of American households have maids or servants.
5. I guess _____ % of American adults regularly have wine with dinner.
6. I guess _____ % of American adult women regularly get a manicure.
7. I guess _____ % of American adults belong to a country club.
8. I guess _____ % of American adults attend charity balls.

Social Comparison Gaps

1. I can afford a better dwelling (apartment, house, etc.) than other people.
2. I can afford to travel more than other people.
3. I can afford better food and drink than other people.
4. I can afford more expensive entertainment than other people.
5. I can afford better transportation (car, SUV, etc.) than other people.
6. I can afford better and more clothes than other people.
7. I can afford better medical care than other people.

Satisfaction with Standard of Living

1. I am satisfied with the material things I have (for example, housing, car, furniture, and the like).
2. I am satisfied with the quality of my leisure life.
3. I am satisfied with my (or my household's) income level.
4. I am satisfied with my (or my household's) financial security.

Satisfaction with Personal Life

1. In most ways, my life is close to my ideal.
2. The conditions of my life are excellent.
3. I am satisfied with my life.
4. So far, I have gotten the important things I want in life.
5. If I could live my life over, I would change almost nothing.

Satisfaction with Current Social Equality

1. In the United States, people can get ahead by their own hard work.
2. In the United States, what one achieves in life depends mainly upon one's family background.
3. One of the big problems in this country is that everyone does NOT have an equal chance to succeed.
4. The United States should make more of an effort to allow everyone to compete for jobs and wealth on a fair and even basis.
5. Differences in income between the wealthy and the poor in the United States are too large.
6. Generally speaking, wealth is fairly distributed in the United States.
7. The United States is doing everything possible to improve the standard of living of all Americans.
8. The United States should make greater efforts to decrease the income gap between people who are wealthy and people who are poor.

**IMPLIED INFORMED CONSENT FORM
FOR SOCIAL SCIENCE RESEARCH**

The Pennsylvania State University

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ORP USE ONLY:	
The Pennsylvania State University Office for Research Protections	
Approval Date: 07/07/04 M. Becker	
Expiration Date: 06/20/05 M. Becker	

Title of Project: Perceptions of Quality of Life

Principal Investigator: Hyeseung Yang, 115 Carnegie Bldg.,
University Park, PA 16802.
Phone: 814-865-6106; E-mail: huy102@psu.edu

Faculty Advisor: Mary Beth Oliver, 210 Carnegie Bldg.,

University Park, PA 16802.
Phone: 814-863-5552; E-mail: mbo@psu.edu

1. Purpose of the Study: The purpose of this research is to study Americans' perceptions of quality of life.

2. Procedures to be followed: Participation in this research will include completion of a paper-and-pencil questionnaire. This questionnaire asks you to report your perceptions of various aspects of the quality of life in the United States, as well as to report basic demographic information and media habits.

3. Discomforts and Risks: There are no risks in participating in this research beyond those experienced in everyday life.

4. Benefits:
    a) You might learn more about yourself (for example, how you look at social reality and how you perceive the quality of your own life) by participating in this study.
    b) The information you provide will help society at large in understanding Americans' perceptions of personal life and the U.S. society.

5. Duration/Time: It will take about 10 minutes to fill out the questionnaire.

6. Statement of Confidentiality: The survey does not ask for any information that would identify who the responses belong to. Therefore, your responses are recorded anonymously. If this research is published, no information that would identify you will be written since your name is in no way linked to your responses.

7. Right to Ask Questions: You can ask questions about the research. The person in charge will answer your questions. Contact Hyeseung Yang at 814-865-6106 with questions. If you have questions about your rights as a research participant, contact Penn State's Office for Research Protections at 814-865-1775

8. Compensation: There will be no forms of compensation for participation in this study

9. Voluntary Participation: Participation in this study is voluntary. You can withdraw your participation at any time and decline to answer specific questions.

You must be 18 years of age or older to consent to participate in this research study.

Completion and return of the survey implies that you have read the information in this form and consent to participate in the research.

Please keep this form for your records or future reference.

A. Using the 1-7 scale, indicate the extent to which you agree with each statement by circling the appropriate number. Note that 1= strongly disagree and 7 = strongly agree.

	Strongly Disagree						Strongly Agree
In the United States, people can get ahead by their own hard work.	1	2	3	4	5	6	7
In the United States, what one achieves in life depends mainly upon one's family background.	1	2	3	4	5	6	7
One of the big problems in this country is that everyone does NOT have an equal chance to succeed.	1	2	3	4	5	6	7
The United States should make more of an effort to allow everyone to compete for jobs and wealth on a fair and even basis.	1	2	3	4	5	6	7
Differences in income between the wealthy and the poor in the United States are too large.	1	2	3	4	5	6	7
Generally speaking, wealth is fairly distributed in the United States.	1	2	3	4	5	6	7
The United States is doing everything possible to improve the standard of living of all Americans.	1	2	3	4	5	6	7
The United States should make greater efforts to decrease the income gap between people who are wealthy and people who are poor.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
In most ways, my life is close to my ideal.	1	2	3	4	5	6	7
The conditions of my life are excellent.	1	2	3	4	5	6	7
I am satisfied with my life.	1	2	3	4	5	6	7
So far, I have gotten the important things I want in life.	1	2	3	4	5	6	7
If I could live my life over, I would change almost nothing.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
I am satisfied with the material things I have (for example, housing, car, furniture, and the like).	1	2	3	4	5	6	7
I am satisfied with the quality of my leisure life.	1	2	3	4	5	6	7
I am satisfied with my (or my household's) income level.	1	2	3	4	5	6	7
I am satisfied with my (or my household's) financial security.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
I can afford to purchase any entertainment that I want.	1	2	3	4	5	6	7
I can afford to travel as much as I desire.	1	2	3	4	5	6	7
I can afford as good of a physical dwelling (house, apartment, etc.) as I want.	1	2	3	4	5	6	7
I can afford as much transportation in as many forms as I desire.	1	2	3	4	5	6	7
I can afford all the food and drink that I want.	1	2	3	4	5	6	7
I can afford all the clothes that I desire.	1	2	3	4	5	6	7
I can afford all the medical care that I want.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
I can afford a better dwelling (apartment, house, etc.) than other people.	1	2	3	4	5	6	7
I can afford to travel more than other people.	1	2	3	4	5	6	7
I can afford better food and drink than other people.	1	2	3	4	5	6	7
I can afford more expensive entertainment than other people.	1	2	3	4	5	6	7
I can afford better transportation (car, SUV, etc.) than other people.	1	2	3	4	5	6	7
I can afford better and more clothes than other people.	1	2	3	4	5	6	7
I can afford better medical care than other people.	1	2	3	4	5	6	7

	Strongly Disagree						Strongly Agree
I admire people who own expensive homes, cars, and clothes.	1	2	3	4	5	6	7
The things I own say a lot about how well I'm doing in life.	1	2	3	4	5	6	7
Buying things gives me a lot of pleasure.	1	2	3	4	5	6	7
I like a lot of luxury in my life.	1	2	3	4	5	6	7
My life would be better if I owned certain things I don't have.	1	2	3	4	5	6	7
I'd be happier if I could afford to buy more things.	1	2	3	4	5	6	7

B. The following questions are asking about your judgments about lives of Americans. There are no correct answers involved in these questions, so please try to provide YOUR OWN estimates.

I guess _____ % of American households have swimming pools.

I guess _____ % of American households own yachts.

I guess _____ % of American households own Jacuzzis.

I guess _____ % of American households have maids or servants.

I guess _____ % of American adults regularly have wine with dinner.

I guess _____ % of American adult women regularly get a manicure.

I guess _____ % of American adults belong to a country club.

I guess _____ % of American adults attend charity balls.

C. The next set of questions relate to your television viewing habit.

1. How many hours do you spend on watching television on a typical weekday (**Monday through Friday**)? Please indicate the number of hours within four time slots of a day.

● 6:00 a.m. to 12:00 p.m. ⇨ _____ hours / **day**
● 12:00 p.m. to 7:00 p.m. ⇨ _____ hours / **day**
● 7:00 p.m. to 10:00 p.m. ⇨ _____ hours / **day**
● 10:00 p.m. to 6:00 a.m. ⇨ _____ hours / **day**

2. How many hours do you usually spend on watching television on **Saturdays and Sundays**?

● Saturday ⇨ _____ hours / **day**
● Sunday   ⇨ _____ hours / **day**

3. How many hours do you spend on watching the following types of television programs in a typical **week**?

Program Types	Amount of Watching
News	_____ hours / **week**
Sports	_____ hours / **week**
Movies	_____ hours / **week**
Comedies/Sitcoms	_____ hours / **week**
Game Shows	_____ hours / **week**
Soap operas (Examples: All My Children, The Young & The Restless, Days of Our Lives, etc.)	_____ hours / **week**
Drama (Examples: NYPD Blue, Judging Amy, Law & Order, 24, etc.)	_____ hours / **week**
Music/Celebrity Shows (Examples: All Access, It's Great To Be…, Diary, TRL, etc.)	_____ hours / **week**

D. Please provide the following demographic information. It will only be used to make statistical comparisons between different groups of respondents; it will not be used to profile individual respondents.

1. What is your nationality? ☐ United States ☐ Other countries

2. What is your gender? ☐ Male ☐ Female

3. How old are you? _____ years

4. What is your primary race/ethnic group? (check all that apply)

    ☐ White/Caucasian   ☐ African American/Black
    ☐ Asian   ☐ Latino/Hispanic
    ☐ American Indian   ☐ Other

5. Which of the following best represents the highest level of education that you have completed?

    ☐ Some high school or less   ☐ High school graduate
    ☐ Attended some college   ☐ Associates degree
    ☐ Bachelors' degree   ☐ Post-college graduate

6. Are you currently employed?

    ☐ Yes, full-time
    ☐ Yes, part-time (30 hours or less per week)
    ☐ No

7. What is your marital status?

    ☐ Couple, married   ☐ Couple, cohabiting
    ☐ Single, never married   ☐ Single, widowed
    ☐ Single, separated or divorced

8. How many adults and children are living in your household? Please put numbers below.

    ● The number of adults (including you) ⇨ _____
    ● The number of children (18 or under) ⇨ _____

9. The total household income was approximately U.S.$_____ before taxes last year.

    ☐ Less than $15,000   ☐ $15,000 to $24,999
    ☐ $25,000 to $34,999   ☐ $35,000 to $49,999
    ☐ $50,000 to $74,999   ☐ $75,000 to $99,999
    ☐ $100,000 to $149,999   ☐ $150,000 to $199,999
    ☐ $200,000 or more

10. What political party do you belong to? (most identify with?)

    ☐ Democrat/Liberal   ☐ Republican/Conservative
    ☐ Independent   ☐ Other

- Thank you -

Research and Teaching Interests

Social and Psychological Effects of Mass Media
Online Communication (Online Journalism and Online Advertising)
Mass Communication Theories
Social Science Research Methods

Published Journal Articles

Yang, H., & Oliver, M. B. (2005). Exploring the effects of Online advertising on readers' perceptions of online news. *Journalism and Mass Communication Quarterly, 81*, 733-749.

Proffitt, J. M., & Yang, H. (2004) News perceptions of sensationalism and medium in the entertainment age. *Kentucky Journal of Communication, 23*, 55-71.

Competitively-Selected Conference Presentations

Yang, H., & Ramasubramanian, S. (2005, May). *Cultivation effects on quality of life indicators: An intercultural study of the effects of American media consumption on relative deprivation among Indian and Korean people.* Paper to be presented at the annual meeting of International Communication Association, New York.

Yang, H. (2004, August). *Imported American television programs and viewers' satisfaction with personal life and society in South Korea.* Paper presented at the annual meeting of Association for Education in Journalism and Mass Communication, Toronto, Canada.

Oliver, M. B., Yang, H., Ramasubramanian, S., Kim, J., & Lee, S. (2004, August). *Exploring a reinforcement model of perceived media influence on self and others.* Paper presented at the annual meeting of Association for Education in Journalism and Mass Communication, Toronto, Canada.

Lee, S., Stavrositu, C., Yang, H., & Kim, J. (2004, May). *Effects of multimedia and sensationalism on processing and perceptions of online news.* Paper presented at the annual meeting of International Communication Association, New Orleans, LA.

Yang, H., & Oliver, M. B. (2003, July/August). *Exploring the effects of online advertising on readers' perceptions of online news.* Paper presented at the annual meeting of Association for Education in Journalism and Mass Communication, Kansas City, MO.

Proffitt, J. M., Yang, H., & Hwang, J. (2002, November). *What is the message?: News perceptions of sensationalism and medium.* Paper presented at the annual meeting of National Communication Association, New Orleans, LA. [Top student paper]

Teaching

Pennsylvania State University, Fall 2004 – Spring 2005.
Course Taught: COMM 420 Research Methods in Advertising and Public Relations.