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Thin is “in” and stout is “out”: What animated cartoons tell viewers about body weight

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Abstract

Relying upon a content analysis of one specific type of medium to which young people are exposed beginning at an early age, on a regular basis, and for many years (i.e., animated cartoons), the present study examines what types of messages are provided about being underweight overweight and normal weight. This research examines the following issues: (1) How prevalent is weight-related content in animated cartoons? (2) Has this prevalence changed over time? (3) What “types” of characteristics tend to be associated with being thinner-than-normal or heavier-than-normal? Results indicate that the prevalence of both underweight and overweight characters has changed dramatically over the course of the past several decades. These relationships are both curvilinear in nature, but in recent decades have demonstrated a significant increase in the proportion of all cartoons showing characters that are underweight and a simultaneous decrease in the prevalence of characters that are overweight. Many variables were found to differ based on cartoon characters’ body weight, including gender, age, intelligence, physical attractiveness, emotional states experienced, prosocial behaviors, antisocial behaviors, and overall goodness/badness. Whenever differences were found, the overriding tendency was for cartoons to provide positive messages about being thin and negative messages about being overweight.

Keywords

Animated cartoons; media content; body weight; portrayals; messages

INTRODUCTION

Research examining how body weight is depicted in the mass media has shown repeatedly that the media portray what many authors have termed a “thin standard” or a “thin ideal”, that is, a tendency to emphasize the importance of one’s weight, to show underweight persons or characters in far greater numbers (or in the alternative, highly-muscularized males) than their normal-weight or overweight counterparts, and to portray the former in a much more flattering manner than the latter (1–4). This has been true regardless of whether the medium in question is soap operas, magazines, advertisements, or prime-time television programming. Recent studies suggest that such messages have become more prevalent over

time and that today, more than ever before, the media provide highly-unrealistic-some would even say highly-unattainable-portrayals of body weight (4). Moreover, researchers have also demonstrated that many persons internalize the “thin ideal” or the “thin standard” propagated by the media, and that people who do this are prone to developing eating disorders (5).

Recent studies based on a closer, qualitative examination of weight-related content in the media have been more infrequent but have, nonetheless, appeared in the scholarly literature. Fouts et al. (6), for example, studied how male characters were shown in primetime television situation comedies. They reported that overweight males were underrepresented in these programs compared to their numbers in the general population and that being overweight was a subject for self-deprecating comedic jokes among such characters. In a companion piece to this research, Fouts et al. (7) examined how female characters were portrayed in the same type of programming. They found that underweight females were overrepresented and that negative comments were made about those females whose weight was considered unacceptably-high. In a study of male fashion magazine content, Petrie et al. (3) noted that, over the years, there has been a consistent presentation of an ideal male body, represented by messages regarding fitness, mass, and overall attractiveness. In their study of advertisements in women’s magazines, Pratt et al. (8) also noted the high prevalence of messages about maintaining an idealized weight and the importance of doing so through weight-control strategies. Guillen et al. (9) also discovered associations between weight loss and increased physical attractiveness, as well as an emphasis on the value of thinness, in their research on the content of magazines targeting adolescent girls. Similar findings were reported by Andersen et al. (10) based on their analysis of young adults’ magazines.

Such messages about the importance of losing weight, the importance of being thin, and the implied relationship between thinness and attractiveness are of concern because they present people with repeated messages about physically and psychologically unhealthy notions of what one should or should not look like. Over the years, a substantial body of literature has accumulated to demonstrate that exposure to the media has a profound impact upon people’s beliefs, attitudes, and behaviors (11, 12). There also appears to be a dose-response effect operating, such that people who have more exposure to the media are more affected by what they see, hear, and read than their peers who are exposed less significantly to media messages (12, 13).

Conceptually, this makes perfect sense and there is a substantial body of theoretical work in the sociological, psychological, and media studies fields to account for – and to anticipate the presence of – these types of effects. For example, social learning theory (14, 15) posits that people acquire their beliefs, attitudes, and propensity to engage in behaviors, directly based on first-hand experiences they have with others who exhibit particular behaviors and/or indirectly, based on what they observe others - including others appearing in the mass media - doing or saying. As Kunkel et al. (16) put it, “through the observation of mass media models the observer comes to learn which behaviors are ‘appropriate’, that is, which behaviors will later be rewarded, and which will be punished.” Accordingly, social learning theory would predict that people of all ages (and young people in particular) will learn a great deal about body weight, social expectations for what is a “proper” body weight, the

accepted or expected steps that can or should be taken to maintain that “appropriate” weight, and the social consequences of being overweight just from being exposed to weight-related media content.

As another example, cultivation theory (17, 18) states that media viewers’ perceptions of social reality will be shaped by extensive and cumulative exposure to media-provided messages. This theoretical model assumes that people develop beliefs, attitudes, and expectations about the real world based on what they see and hear on television, on video, in film, in magazines, etc. Subsequently, they use the beliefs, attitudes, and expectations they have developed to make decisions about how they will behave in real-world settings and situations. Again, Kunkel et al. (16) put it well when they stated “The media, in particular television, communicate facts, norms, and values about our social world. For many people television is the main source of information about critical aspects of their social environment... Whether television shapes or merely maintains beliefs about the world is not as important as its role in a dynamic process that leads to enduring and stable assumptions about the world.” In the context of the study of weight-related media content, then, cultivation theory would posit that media messages serve as agents of socialization regarding what to think about thinness, being overweight, and weight-related behaviors. This would be particularly true for young viewers who are exposed rather heavily to such media messages through the types of programming that they tend to view. Given the types of messages that the media provide about body weight, cultivation theory would predict that the cumulative effect of exposure to these messages would provide young people with beliefs and attitudes that, ostensibly, reinforce the notions that thinness is appropriate and expected, that there are numerous justifications for making sure that one’s weight is always under control, that there will be social consequences to pay if one’s weight does not conform to the media-promulgated standards, and so forth.

Taking these theoretical models’ tenets and the aforementioned research studies on media effects to heart, the present study entails an examination of body weight-related messages in a medium that, we contend, is likely to provide young people with some of their earliest notions regarding body weight and weight-related standards/expectations: animated cartoons. We have chosen animated cartoons as the focal point of this research for a few reasons. First, people are exposed to this type of medium beginning at an early age. Therefore, weight-related messages provided by this particular medium are likely to be influential in the initial stages of developing beliefs and attitudes about thinness and obesity. Second, for most young people, this exposure continues for many years, and typically entails repeated and frequent media content exposures during that entire viewing period. Thus, animated cartoons also help to crystallize young people’s weight-related beliefs and attitudes, while helping to shape relevant behaviors through the repeated and consistent weight-related messages they provide. Research has shown that early-life exposure to media messages does, indeed, affect the formation of attitudes and contributes to the crystallization of notions about a variety of aspects of young viewers’ social worlds (19, 20).

In this study, we address three principal research questions. First, how prevalent is weight-related content in animated cartoons? Second, has this prevalence changed over time? Third, what “types” of characteristics tend to be associated with being thinner-than-normal or

heavier-than-normal? We conclude by discussing the implications of our findings and elaborating briefly upon some steps that might be taken in the future to provide viewers with what we consider to be more-positive, less-stereotyped weight-related messages.

METHODS

Sampling strategy

This study is based on an examination of the content of animated cartoons. For the present study, only animated cel cartoons are included in the sample (e.g., Bugs Bunny, Popeye, Mighty Mouse, Yogi Bear). This eliminates from the present study such types of animation as claymation (e.g., Gumby and Pokey, the California Raisins), pixillation (the type of animation usually seen at the end of The Benny Hill Show), and puppet animation (e.g., Davey and Goliath, George Pal's Puppets).

The cartoons chosen for the study sample were selected randomly from among all cartoons produced between the years 1930 and the mid-1990s by all of the major animation studios. Before drawing the final sample of cartoons that would be viewed and coded for this work, the researchers had to develop a comprehensive and inclusive sample frame of cartoons produced by the aforementioned animation studios. Published filmographies (21, 22) provided the authors with a great deal of this information, and in some instances, the animation studios themselves were contacted and asked to provide comprehensive episode-by-episode lists of animated cartoons they had produced. Once the "universe" of cartoons had been identified, actual copies of the specific cartoons selected for viewing and coding as part of the random sampling approach had to be located. This was done in a wide variety of ways: by contacting animation fans and collectors and having them make copies of some of their cartoons for us, visiting film archives and repositories and viewing cartoons in their libraries/holdings on site, obtaining copies of the needed cartoons directly from the animation studios, purchasing sample-selected items from retail outlets and private sellers who advertised them in trade publications, renting videocassettes from retail outlets like Blockbuster Video, and videotaping from programs broadcast on television.

The origination date for this research (1930) was chosen for four reasons: 1) many major animation studios had begun operations by that time, 2) the era of silent cartoons had virtually ended, 3) cartoons produced prior to 1930 are not very accessible today, and 4) many cartoons produced during the 1930s are still broadcast on television and/or available for viewing on home video. Due to the fiscal constraints of the funding program, only animated cartoons with a total running time of 20 minutes or less were included in the sample frame.

A stratified (by decade of production) random sampling procedure was used to ensure that cartoons from all decades were represented equally in the study sample. This stratification procedure was necessary because very different numbers of cartoons have been produced during different decades (e.g., many more were produced during the 1980s than during the 1930s), thereby leading to the risk that a general random sample (as differentiated from this study's stratified random sample) might have led to an overrepresentation of certain decades

during which greater- or lesser-than-average numbers of heavy or thin characters were portrayed.

Data collection

This study relied upon a content analysis approach to examine the types of messages that cartoons provide about body weight. Data collection for this research entailed viewing the cartoons contained on the project's sample list and recording detailed information on predesigned, pretested, pilot tested, fixed-format coding sheets. Prior to beginning their viewing and coding work for this study, research assistants underwent an intensive training that familiarized them with the data that the study strived to collect, the rationale underlying the coding of each piece of information, and the decision-making procedures that should be used when recording information from each cartoon. To make sure that all people involved in the viewing/coding (i.e., data collection) process implemented the decision-making procedures in a similar manner, intercoder reliability coefficients were calculated periodically throughout the project. Reliability estimates consistently were above 0.80 for all major measures, and were at least 0.90 for all of the variables used in the analyses reported in this article, indicating a very high level of intercoder reliability for this research.

To understand the information that this study contains, it is best to conceptualize the database as consisting of two datasets. Dataset #1 focuses on the cartoon itself as the unit of analysis and contains macro-level variables that provide prevalence-type information. Among several others, this dataset includes such measures as the cartoon's length; number of characters of each gender, race, age, body weight group and so forth; number of times using or making reference to various legal and illegal drugs; and number of prosocial and antisocial acts committed. This dataset facilitates analyses indicating the proportion of cartoons containing at least one underweight or overweight character, how these proportions changed over time, or identifying the rate of seeing characters of different body weight classifications per hour. The sample size for this data set is 1,221.

Dataset #2 focuses on the major characters in each cartoon (regardless of whether they are human characters, animals, personified inanimate objects [e.g., cars with the ability to growl or dance, telephone poles given human-like abilities to see or hear or sing], monsters, ghosts, etc.), providing detailed information that is of value when trying to interpret the types of messages that cartoons provide about who it is that is shown to be underweight, overweight or of a normal weight. This dataset contains information about each major character's gender, age, race, ethnicity, marital status, level of intelligence, attractiveness, body weight, physique, occupational status, level of goodness or badness, and other demographic-type and descriptive information. In addition, Dataset #2 contains data about the number of acts of violence, aggression, and prosocial behaviors (and limited information about the types of these behaviors involved) that the characters have committed. This dataset's information is useful for examining such things as whether males/females or smart/dumb characters or attractive/unattractive characters are more likely to be underweight/overweight, whether underweight/overweight characters engage in more activities, prosocial behaviors, antisocial behaviors, and so forth. The sample size for this data set is 4,201.

Operational definitions of some key concepts

Perhaps the most important operational definition to provide for this study is that used for classifying characters' body weight. In this research, every character's body weight was classified either as "underweight or thinner than normal" or "average or normal weight" or "overweight or heavier than normal." Coders were instructed to code all characters as "average or normal weight" by default unless the cartoon provided specific, unmistakable reasons (based on the character's appearance) to select one of the other body weight classifications. The benchmark that coders were instructed to use for classifying a character as being something other than "average or normal weight" was that the character was "supposed to be obviously heavy, obese, or fat or" "supposed to be obviously underweight, thin, or skinny." Cartoons are rarely subtle in the messages they try/wish to convey; so utilizing this type of coding rule was, in actuality, quite easy for coders to apply in a consistent manner to the classification of characters' body weight.

In this study, we collected the data reported in this manuscript only for major characters. We felt that it was important to distinguish between major and minor characters because the former have a much greater and much more consequential impact upon cartoons' storylines and messages, whereas the latter do not. Therefore, we adopted operational definition criteria that would enable the two character types (i.e., major and minor) to be differentiated easily and in a meaningful way. Coders were instructed to follow these rules in order to determine whether a character was "major" or "minor": First, all characters were supposed to be classified by default as minor, unless the conditions stipulated in one or more of the subsequent rules were met. Second, if a character appeared in an average of at least two camera cuts¹ for each complete minute or additional partial minute² of the cartoon's running time, that was sufficient to label it a "major" character. For example, if a cartoon had a total running time of 8 minutes and 10 seconds, a character would have to appear at least 18 times (i.e., in 18 or more camera cuts, [that is, two per minute or partial minute of running time, multiplied by nine minutes/partial minutes increments]) throughout the duration of the cartoon in order to be considered "major" using this criterion. Third, a character could be considered "major" if it spoke an average two sentences or phrases counting as sentences³ per minute or partial minute of the cartoon's total running time. Fourth, a character could be considered "major" if it had an average of three or more camera cuts in which it appeared and sentences or phrases counting as sentences per minute of the cartoon's running time. This criterion was implemented to take into account that many consequential characters in the cartoons do not appear a lot and do not say a lot, but their cumulative visual and verbal presence in the cartoon merits "major" character status even though the two previous rules

¹The best way to understand the concept of "camera cut" is to think of looking through the lens of a camcorder, as if one were filming. Whatever is seen through the lens is in the field of vision. If someone moved outside of the field of vision and then returned to it, either because of his/her own movement or because of the movement of the camcorder's field of vision, that would constitute two camera cuts by this study's definition – one when he/she was initially in the picture, and a second one when he/she returned to view again after the temporary disappearance.

²Time increments for these computations were based in much the same manner that parking garage fees are based. If someone stays for 1 hour and 15 minutes, that person is charged for two hours. Likewise, in this study, if a cartoon had a running time of eight minutes and ten seconds, the computations for major/minor character are based on a nine-minute-long cartoon rule.

³Many dialogs and verbal exchanges or utterances do not involve complete sentences, but instead, are based on "short-hand" responses that take the place of complete sentences. For instance, if someone asked "How are you doing today?" and the response given was "fine", in this study, the "fine" reply would be considered one phrase counting as a sentence, since it is the functional equivalent of a "I am doing fine" complete-sentence response.

would have prevented such a designation from being made. Finally, a character could be considered “major” if it appeared on screen for at least 20% of the cartoon’s total running time, regardless of the number of camera cuts and sentences or phrases counting as sentences spoken. Generally speaking, although these rules may seem to be somewhat convoluted, determining whether a character was a major or minor one was an easy, straightforward, and relatively-obvious process.

Analysis

Some of the findings reported in this paper are based on descriptive statistics, particularly where prevalence estimates are used, as was the case for addressing Research Question 1. Changes over time (Question 2) are examined using logistic regression, since the dependent variable was dichotomous (e.g., whether or not a cartoon contained underweight or overweight characters) and the predictor variable was a continuous measure. The analyses examining the characteristics associated with which “types” of characters (Question 3) were more/less likely than others to be underweight/overweight entailed the computation of odds ratios (ORs), with 95% confidence intervals (CI₉₅) presented for each estimate. Odds ratios were selected for many of these analyses because they facilitated direct comparisons of the messages provided about underweight or overweight characters, whereas other statistical tests do not lend themselves so easily to such comparisons and interpretation. Results are reported as statistically significant when-ever $p < 0.05$. Where appropriate, we have also provided information about Bonferroni corrections for these analyses, so that the desired level of statistical significance is maintained even after taking into account the number of statistical comparisons made.

RESULTS

Prevalence of thin/heavy characters

Due in great part to the instructions to the coders to use “average/ordinary weight” as the default code, the overwhelming majority (88.0%) of the characters studied were classified into this category. Of the remainder, characters were more than twice as likely to be overweight as they were to be underweight (8.6% versus 3.4%). Similarly, the cartoons studied were more than twice as likely to contain at least one overweight or heavier-than-average character (22.4%) than they were to contain at least one underweight or thin character (9.9%).

Figure 1 provides prevalence information from the Cartoon Database. It shows that both the proportion of major characters that were underweight and the proportion of major characters that were overweight underwent significant changes over time ($p < 0.04$ and $p < 0.0007$, respectively). Basically, as time proceeded, the general trend was for cartoons to become less likely to include any overweight characters while simultaneously becoming more likely to include at least one underweight character. A closer examination of these relationships showed that both were curvilinear in nature. The proportion of underweight characters more than tripled between 1930 and the later 1960s ($p < 0.02$) and then declined very sharply until it reached an historic low during the mid-1980s ($p < 0.02$), after which another substantial increase occurred until the mid-1990s ($p < 0.02$). Conversely, the proportion of overweight

characters decreased by nearly 50% between 1930 and the mid-1950s ($p<0.05$), after which it increased nearly four-fold until the late 1960s ($p<0.03$), which was followed by another precipitous decline that lasted until the mid-1990s ($p<0.02$).

Characteristics associated with thinness or heaviness

Females were more than four times as likely as males to be shown as an underweight character ($OR=4.44$, $CI_{95}=3.13-6.48$, $p<0.0001$) and, conversely, males were nearly twice as likely as females to be shown as an overweight character ($OR=1.77$, $CI_{95}=1.23-2.54$, $p<0.002$). Youths were less likely to be shown as overweight when compared to their adult or elderly counterparts ($OR=0.30$, $CI_{95}=0.20-0.44$, $p<0.0001$). Body weight was also linked to characters' height, such that taller-than-average characters were more than five times as likely to be thin as their average or shorter-than-average counterparts ($OR=5.46$, $CI_{95}=3.84-7.76$, $p<0.0001$). Overweight characters were far less likely to be depicted as physically attractive than their normal-weight or underweight counterparts ($OR=0.35$, $CI_{95}=0.25-0.50$, $p<0.002$). With regard to messages provided about the relationship between a character's body weight and the "acceptability" or "ordinariness" of that character's physique, whilst cartoons were nearly four times more likely to imply that a thin character's physique was below average versus that of an average-weight or overweight character ($OR=3.87$, $CI_{95}=3.05-4.93$, $p<0.0001$), they were more than twelve times more likely to imply this about a heavy character's physique ($OR=12.33$, $CI_{95}=9.05-16.80$, $p<0.0001$). Overweight characters were more than twice as apt to be shown as unintelligent as their normal-weight and underweight counterparts ($OR=2.34$, $CI_{95}=1.55-3.56$, $p<0.0001$). Heavy characters were more likely to be shown to suffer from some type of physical disability when compared to their average-weight or thinner-than-average counterparts ($OR=1.41$, $CI_{95}=1.05-1.92$, $p<0.03$). For these particular analyses, readers wishing to consider the results in light of a Bonferroni statistical correction should utilize a level of $p<0.0071$ as the threshold for determining statistical significance.

In terms of most emotional/affective/feeling states, characters of different body weight classifications did not differ from one another. This was true for anger, fatigue, loneliness, boredom, shyness, and fear. A few noteworthy exceptions were identified, though. First, overweight characters were less likely than others to experience happiness ($OR=0.64$, $CI_{95}=0.47-0.87$, $p<0.004$). Second, thin characters were more likely than others to be shown as energetic ($OR=1.76$, $CI_{95}=1.21-2.56$, $p<0.003$). Third, overweight characters were less likely than their thinner and average-weight counterparts to be portrayed as loving ($OR=0.67$, $CI_{95}=0.47-0.95$, $p<0.03$). For these particular analyses, readers wishing to consider the results in light of a Bonferroni statistical correction should utilize a level of $p<0.0056$ as the threshold for determining statistical significance.

Body weight and activities

We also examined a variety of practical and leisure-time activities in which characters engaged, and looked at weight-related differences. For most variables, body weight was unrelated to involvement in the activity in question. A few exceptions were noted, though. First, to our surprise, overweight characters were more than twice as likely as others to exercise ($OR=2.35$, $CI_{95}=1.17-4.70$, $p<0.02$). Second, also to our surprise, television

viewing was more the domain of underweight characters than their average-weight or heavier counterparts (OR=2.42, CI₉₅=1.24–4.73, $p<0.008$). It is interesting to note, though, that on the overall activities index (summing the number of different activities in which characters engaged), a weight-related difference was obtained: Thinner-than-average characters were shown to be significantly more active than their average-weight or heavier counterparts ($p<0.009$), with the former engaging in about one-third more activities than the latter. Underweight characters were more likely than others to be shown to eat something (OR=1.81, CI₉₅=1.16–2.82, $p<0.009$). When they did eat something, however, overweight characters were the ones that were more likely to eat what we might term “junk foods” (OR=2.61, CI₉₅=1.39–4.88, $p<0.003$). Characters of all body weight classifications were equally likely to consume a healthy food ($p<0.44$). For these particular analyses, readers wishing to consider the results in light of a Bonferroni statistical correction should utilize a level of $p<0.0083$ as the threshold for determining statistical significance.

Involvement in a number of prosocial and antisocial behaviors also was examined. Overall, we discovered that underweight characters were more apt than average-weight and overweight characters to engage in any prosocial behaviors (OR=1.70, CI₉₅=1.20–2.40, $p<0.003$). Closer analysis of the data showed that thinner-than-average characters provided more financial-type assistance to others than normal-weight and overweight characters did ($t=2.03$, $p<0.05$). Conversely, analyses revealed that overweight characters were more likely than others to perpetrate at least one antisocial behavior (OR=1.47, CI₉₅=1.16–1.87, $p<0.002$). Heavy characters engaged in about 50% more physical aggression ($t=3.02$, $p<0.003$) and about 50% more verbal aggression ($t=3.37$, $p<0.0008$) than their thin or average-weight counterparts. For these particular analyses, readers wishing to consider the results in light of a Bonferroni statistical correction should utilize a level of $p<0.0083$ as the threshold for determining statistical significance.

Finally, we looked at the variable classifying a character’s overall goodness versus badness. We found that overweight characters were less likely than others to be classified as a “good guy” (OR = 0.55, CI₉₅ = 0.41–0.74, $p<0.0001$).

DISCUSSION

Before discussing the implications of our main findings, we would like to acknowledge a few potential limitations of the present study. First, this research was based on animated cartoons with running times of 20 minutes or less, thereby excluding longer-form animated cartoons from consideration. We do not know whether or not short-form and long-form animated cartoons are similar to one another with respect to the types of messages they convey, and therefore cannot assess the extent to which the exclusion of the latter may affect this study’s findings. Conducting research such as ours with the longer cartoons would be a worthwhile endeavor for future researchers to undertake. Second, our sample ends during the middle-1990s. It would be helpful and, we believe, interesting to have this research extended to the present, so that the most up-to-date trends possible are studied and analyzed. Third, as with any content analysis research study, some scholars might prefer to see different operational definitions of the key concepts used. There is no “gold standard” in content analysis research with regard to defining major versus minor characters, thin versus

overweight characters, and so forth. The definitions that we adopted were chosen on the basis of common sense, so that they would foster face validity, and on the basis of simplicity and clarity of implementation, so that they would maximize interrater reliability. We believe that our operational definitions are well-conceptualized and justified; but as with any content analysis study, there is no way to know the extent to which the use of different definitions might have led to different research findings.

Despite these potential limitations, we still believe that the present research has much to contribute to our understanding of cartoons' messages about body weight. Without a doubt, the animated cartoons studied in conjunction with this research communicated a clear, consistent message with regard to body weight: "Thin is in and stout is out." On virtually all dimensions examined, socially-desired traits were associated with thinness and socially-disapproved characteristics were associated with being overweight. For example, our culture values youthfulness over age; youths were more likely to be shown to be thin. As another, even better example, our culture places great importance on physical beauty. Cartoons conveyed the messages that thin characters are attractive and heavy characters are below-average in attractiveness and especially below-average when it comes to their physiques. Intelligence is also prized in our society and, once again, below-average intelligence was associated with the less-valued group: heavier-than-average characters. Even when it comes to emotional states, cartoons reinforce the very same types of messages. We like being around people who are happy, energetic, and loving. All of those traits were depicted to be more typical of thin characters than of those that are normal or heavier-than-average in weight. Compounding these findings, we also discovered that underweight characters were more likely to perform prosocial acts—that is, to do things that are designed specifically to benefit others—than other characters are, and conversely, that overweight characters were more likely to engage in antisocial acts when compared to others. When the overall "goodness/badness" dimension was examined, heavy characters were far less likely than others to be considered "good guys." Taken together, all of these findings add up to a pretty convincing overarching message about thinness and heaviness: the former is good, whereas the latter is not.

Our research is, therefore, consistent with the many published studies (cited earlier) that have shown negative body image-related messages provided by the media. Our work contributes to this corpus by demonstrating that these types of messages are supplied in a medium to which people are exposed beginning at a very early age, for many years, and on a repeated basis throughout those years of exposure. Animated cartoons, we contend, both reflect and shape social values about body weight, and help to form children's initial notions of what it means to be thin or heavy. Through the repeated exposure to such consistently-negative messages about being overweight and such consistently-positive messages about being underweight, young people come to learn that it is good to be thin and bad to be heavy. These messages, in turn, are reinforced by other media to which they are exposed (since those media, too, typically portray similar messages about thinness and heaviness), by their peers, by their parents, and by other role models around them. The adverse effects of internalizing such messages about body weight have been shown in numerous studies that have linked them to problems like low self-esteem (23, 24), poor body image (25, 26), eating disorders (5, 27–29), and depression (25, 30), among others.

Another point we wish to discuss from this research pertains to our prevalence-related findings. We discovered that, for the past 30 years or so, the proportion of major characters shown to be overweight has declined sharply, reducing by more than 50% during that time period. This reduction in the presence of overweight characters coincides with a briefer period (from the early 1980s forward) during which the presence of underweight characters increased dramatically. We find these changes particularly intriguing when they are viewed in light of weight-related trends in the human population of the United States throughout these years. Far from becoming lighter in weight, the American population has gained weight steadily in recent years such that now, more than ever before, a larger proportion of the adult and youth populace is overweight (31, 32). As the American people become heavier and heavier, they are exposed to more and more underweight characters in the animated cartoons they watch. The increasing prevalence of underweight characters helps to reinforce the social expectations of keeping one's weight low; and the importance of being thin and the traits associated with being thin (such as those we discussed above) are further reinforced by showing more and more such characters as time goes on.

It is intriguing to us that animated cartoons provide a rather mixed, if not downright hypocritical, message when it comes to the relationship between eating and exercise and body weight. Thin, rather than heavy, characters were shown to be more likely to eat something. But when they did consume something, overweight characters tended to be more likely to ingest "junk food" than their thinner and average-weight counterparts. In contrast, overweight characters were more apt to exercise and underweight characters were more apt to be shown watching television. How is it, we wonder, that the cartoon characters that are the most likely to eat, the least likely to exercise, and the most likely to watch television are supposed to remain so thin? It would be very interesting to learn just what messages young viewers take away with them from portrayals such as these. Research has shown that children tend to learn and to be influenced more by media content that is consistent in the messages it provides than by content that contains inconsistent messages (33, 34), and it is much less-well-understood how mixed messages-such as those just described with regard to diet and exercise-affect them and/or are internalized. This would be a fruitful avenue for future researchers to explore.

What might be done based on these findings?

There are a number of things that might be done in an attempt to improve on the situation outlined above. First and foremost, studios producing new animated cartoons and the story-writers and producers of such cartoons could begin to include more positive messages about overweight characters. Such characters could-and we contend, should-be shown more realistically so that more of them are portrayed as attractive, intelligent, loving, happy, and positive just as underweight characters now are. In addition, more such characters could-and again, we believe, should-be included in the new generation of cartoons that are being produced. At the same time, reducing cartoons' emphasis on the intrinsic importance of being thin would be a wise addition to accompany the improved images of overweight characters. Providing more-balanced messages about the thinner-than-average characters-for example, by showing fewer of them as being so conspicuously attractive, intelligent, energetic, and so forth-would help to expose viewers to more realistic messages about what

it means (and what it does not mean) to be thin. More than anything else, what we are advocating here is a movement toward balanced messages regarding the relationship between personality characteristics, social values, and portrayals of body weight. Some underweight persons are attractive; some are not. Some overweight persons are attractive; some are not. Likewise, the same can be said for how intelligent such persons are, how prosocial or antisocial they are, and so on. We believe that one excellent way to begin to improve cartoons' content vis-a-vis body weight would be, quite simply, to provide a broad array of messages for characters of all types, rather than the weight-based stereotyping that heretofore has typified animated cartoon storylines.

Another positive change that we believe merits consideration is the provision of more consistent and health-oriented messages regarding diet and exercise in the next generation of animated cartoons. There is nothing wrong, in our opinion, with showing overweight characters being prone to exercising. Quite to the contrary, we consider this a good thing for cartoons to be depicting. We do believe, though, that thin characters and average-weight characters should be shown exercising equally often, since this behavior is no less important for the maintenance of good health among thin and normal-weight persons than it is among those who are overweight. Likewise, there is nothing inherently wrong with showing underweight characters eating. But we believe that, to the extent that animated cartoon story-writers are going to show characters consuming food, all characters, without regard to their body weight, ought to be included in such portrayals. To date, our research has found that cartoons have tended to show underweight, overweight, and normal-weight characters eating healthy foods about equally often. We applaud such imagery and urge story-writers to continue to provide such messages in the years/cartoons to come. One area for improvement would be in terms of how so-called "junk food" consumption is shown, since the tendency to date has been to show heavier characters consuming more such foods than their thinner counterparts. Minimizing the presence of this type of food consumption in animated cartoons probably would be wise, so as to help socialize younger viewers to develop better eating habits. To the extent that it will continue to be shown, we believe that it should be shown as something that underweight, normal-weight, and overweight characters alike do. Alternatively, providing some story-lines about the adverse consequences that could result from overeating or from eating poorly (e.g., losing energy, developing health-related problems) might be an effective, entertaining way of conveying useful information about diet and exercise to young people. During the 1970s, the animated series *Fat Albert* and the *Cosby Kids* did an exemplary job of providing this type of message to viewers in a way that was highly entertaining. It is programming of this type that we are advocating here.

Finally, providing counter-programming amidst televised animated cartoon episodes (or alongside such cartoons made available to consumers on home video and DVD) might also be an avenue worth exploring. One way that counter-programming could be implemented—one that we think might be worthwhile and cost-effective for the television and cable industries to consider—would be through the addition of interstitial segments in existing animated cartoon programs. Interstitials are small program segments, usually having running times ranging from 30 seconds to about 3 minutes, that can be inserted between cartoon episodes within a given program if the episodes are short enough or that can be inserted between programs during the commercial blocks that occur before and after scheduled

programming is broadcast. As short-form segments, interstitials would be inexpensive to create, and their short running times would allow them to be added to a variety of children's programs without requiring the broadcaster to edit these programs for time. The interstitials could be made so that they feature the same cartoon characters shown in the original (i.e., "problematic") cartoons, but with short vignettes that are simultaneously entertaining, enlightening, prosocially-oriented, and weight-positive. In this manner, the original, entertaining, but weight-stereotyping cartoons can remain intact and be broadcast intact while being combined with newer content that is designed to be equally entertaining but more prosocial in nature. Over the years, some studios (most notably Hanna Barbera and Warner Brothers) and some television networks (most notably the American Broadcasting Company [ABC]) have implemented educational and/or prosocial interstitial segments into their animated cartoon programming, and these programs have been entertaining and positive in their content⁴. We applaud these efforts. Moreover, some research has been conducted on the effects of counter-programming, generally showing at least some measure of success in accomplishing its goals (35). We believe that this type of approach to the weight stereotyping problem we have outlined in this paper merits farther exploration in the years to come.

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⁴Hanna Barbera, for example, included safety-related interstitial segments into its hour-long Superfriends cartoon block during the mid-1970s. These featured the Wonder Twins in three-minute self-contained cartoons that focused on such topics as crossing the street safely, how to be safe underwater, how to avoid drug use, and so forth. ABC is perhaps the best known provider of interstitial animated programming with its Schoolhouse Rock interstitial between-program segments featuring well-known vignettes like "I'm Only a Bill," "Conjunction Junction", and "Interplanet Janet". Most recently, the Warner Brothers studio's cartoon programs The Animaniacs and Pinky and the Brain incorporated highly-entertaining interstitial animated cartoons of one to three minutes in length, focusing on such subjects as the names of various countries of the world, different types of cheese and the countries from which they originate, and the elements of the periodic table.

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FIGURE 1.

The presence of any overweight and underweight characters, over time.