Published in final edited form as:
J Consum Aff. 2009 ; 43(1): 108–128. doi:10.1111/j.1745-6606.2008.01129.x.

Alcohol Messages in Prime-Time Television Series

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Abstract

Alcohol messages contained in television programming serve as sources of information about drinking. To better understand the ways embedded messages about alcohol are communicated, it is crucial to objectively monitor and analyze television alcohol depictions. This article presents a content analysis of an eight-week sample of eighteen prime-time programs. Alcohol messages were coded based on modalities of presentation, level of plot connection, and valence. The analysis reveals that mixed messages about alcohol often coexist but the ways in which they are presented differ: whereas negative messages are tied to the plot and communicated verbally, positive messages are associated with subtle visual portrayals.

The role of television as a socialization agent is well established (Way 1984). Television programs provide vivid insights into the lifestyles of influential and often aspirational characters (Diener 1993;Russell, Norman, and Heckler 2004), showing what they do, eat, or drink (Avery and Ferraro 2000;O'Guinn and Shrum 1997). As a result, consumers acquire a lot of knowledge, including health-related information (Beck et al. 2004;Gerbner 1995), from watching television dramas. This can become an issue when the information presented or lifestyles depicted do not accurately reflect reality or when behaviors displayed are not recommended (Way 1984). For instance, studies in the 1990s showed that viewers who spend more time consuming mass media held beliefs that were less supportive of good health and nutrition (Avery et al. 1997;Signorielli 1993).

One topic of great societal concern, given the potential influence of television programs on viewers, is the presence of messages about alcohol. Worldwide alcohol consumption and the related problems are on the rise. Globally, alcohol is linked to at least 773,600 direct deaths and a multitude of other health and societal problems (WHO 2007). In the United States alone, alcohol consumption is directly responsible for 85,000 deaths (Mokdad et al. 2004), including 12,700 vehicle fatalities (Yi, Williams, and Hilton 2005), and 1,574,000 hospital admissions annually (Chen, Yi, and Hilton 2005). These numbers do not truly reflect the full array of negative consequences (e.g., lost productivity, prevention programs, and healthcare expenditures) related to alcohol consumption. Portrayals of alcohol in the media have been linked to the development and maintenance of beliefs about and attitudes toward alcohol. Some studies have shown, for instance, that young people who are more exposed to positive alcohol portrayals and advertising have more favorable beliefs about drinking, say they are more likely to drink in the future, and are more likely to consume alcohol (Grube and Wallack 1994;Snyder et al. 2006;Stacy et al. 2004). Alcohol portrayals in the content of television programs also reinforce existing alcoholic behaviors. For instance, research has shown that exposing people with high alcohol dependence to a television program with alcohol scenes made it more difficult for them to resist the urge to drink heavily (Sobell et al. 1993).

To better inform consumers about the messages communicated in the content of potentially influential sources of information, it is important to monitor the content of television programs (Way 1984). The purpose of this research was to provide a comprehensive account of alcohol representations in prime-time television programming through detailed content analysis. The sample consists of 8 episodes for each of the eighteen prime-time television programs from the fall 2004 season, comprising 144 episodes. Going beyond previous studies, the content analytic procedures map the alcohol messages communicated within each episode onto a typology according to dimensions identified in recent research as key factors affecting the impact of messages embedded in audiovisual content, namely, modality of presentation and level of plot connection (Babin and Carder 1996;d'Astous and Seguin 1999;Gupta and Lord 1998;Nelson 2002;Russell 2002). These dimensions are used to identify how messages about alcohol's positive and/or negative consequences are being communicated. In so doing, this investigation of alcohol portrayals in television programming extends existing content analyses of alcohol depictions (Austin and Meili 1994;Breed and De Foe 1981;Diener 1993;Futch, Lisman, and Geller 1984;Mathios et al. 1998;Pendleton, Smith, and Roberts 1991;Wallack et al. 1990) and provides insights into the potential impact that embedded alcohol messages might have on audiences.

ALCOHOL MESSAGES ON TELEVISION

Alcohol is increasingly present in the content of the television programs, films, or music videos. In fact, one study of food and beverage portrayals in prime-time programs found that alcohol was the most frequently depicted item, comprising 20% of all food and beverage portrayals (Avery et al. 1997).

Forces Influencing Alcohol Messages in Television Programs

There are many forces driving the inclusion of alcohol messages in the stories or on the sets of television programs. Product placement, a marketing practice in which companies pay for inclusion of their products in films and television programs (Balasubramanian 1994), is a frequent practice for the alcohol industry. In fact, alcohol is one of the most actively placed product categories in Hollywood television programs and movies (Russell and Belch 2005). The global placement industry is now a $7.45 billion business, with $2.1 billion spent in 2006 on paid television placements alone (PQ Media 2007). Product placements have become ubiquitous, with one estimate approximating their use in 75% of prime-time television programming (Consoli 2004). A major content analysis found that alcohol placements occurred at least once in 181 television series during the 1997–1998 season and in 233 movies (FTC 1999).

A competing and more recent trend is that television programs, along with other entertainment media, are increasingly used as platforms for educating viewers about risky behaviors, including alcohol abuse. The use of so-called entertainment–education techniques is becoming more common to tackle especially difficult issues, such as sexual responsibility or gender issues, targeting especially vulnerable audiences (Pechmann and Wang 2008; Singhal and Rogers 2002). There is no doubt that television series have much educational potential, and indeed, entertainment–education collaborative efforts between the public health organizations and the television industry have led to many programs “interweaving accurate health and social content” (Fox 2005). As a case in point, research showed that a story about a condom failure and a resulting pregnancy in an episode of *Friends* increased the viewers' perceptions of risks associated with condom use (Collins et al. 2003). And indeed, a number of studies have shown that embedded health messages can influence viewers' attitudes and beliefs in areas such as emergency contraception (Folb 2000) or AIDS (Kennedy et al. 2004), and they are perceived as more practical than overt persuasive attempts such as public service announcements.

Of course, television producers and writers are not always guided by marketers or education–entertainment efforts when developing story lines and creating sets. In their content analysis of sex portrayals in the television series *Sex and the City*, for instance, Jensen and Jensen (2007) report that the series' writers incorporated in the story lines of many episodes a number of important health issues such as smoking and cancer and paid special attention to issues of sexual health. Although the series earned a number of awards for such treatments of health issues, other researchers identified missed opportunities for conveying realistic and useful messages, such as those focused on the central breast cancer narrative included in one of the episodes (Gray 2007). In the end, artistic freedom prevails and products such as cars, home furnishings, or food and drinks are used, first and foremost, to depict scenes as realistic and lifelike (Russell and Belch 2005) and to serve as "psychocultural" cues for the audience to construct meanings about characters and groups (Avery and Ferraro 2000; Hirschman, Scott, and Wells 1998; Sherry 1995; Solomon and Greenberg 1993). The term "word-of-author advertising" actually captures the fact that writers of screenplays, novels, or television dramas incorporate consumption references and brands in the texts of their works (Friedman 1985) because of their desire to reflect real life.

Limitations of Previous Alcohol Content Analyses

A direct implication of these many driving forces is that the resulting message about alcohol can be positive, negative, or even mixed. Yet, previous content analyses of alcohol in television programs have not fully accounted for the mixed nature of the alcohol messages. Positive messages about drinking include its association with humor, valued outcomes such as camaraderie or romantic encounters (Hundley 1995), or other forms of positive endorsements by characters (Blair et al. 2005). However, the potential for alcohol portrayals to communicate messages about the risks associated with drinking must also be considered, as drinking is at times associated with negative outcomes, such as unwanted sexual intercourse, addiction, accidents, and death. The actual message about alcohol is thus often ambivalent. Characters may reflect positive or negative attitudes about product preferences. For example, in the program *Frasier*, he and his brother, both affluent wine and spirits consumers, often scoff at their father's preference for cheap beer (Chang and Roth 2000). To further complicate matters, a recent study of the reality program *The Osbournes* showed that the same character who was at times endorsing alcohol was also depicted as rejecting alcohol (Blair et al. 2005).

Existing content analyses of alcohol in television programming are limited in several other ways. First, they have tended to focus on significant alcohol scenes (Breed and De Foe 1981), thus missing more subtle but potentially potent messages. Yet, it is important to go beyond the explicit messages about alcohol and systematically capture more subtle references to alcohol as well, especially since previous research has shown that even these subtle portrayals can affect viewers' attitudes (Russell 2002). Second, existing content analyses often present only categorical data that, although insightful, do not allow for higher order statistical analysis (Kolbe and Burnett 1991). Observations aggregated at the episode level, as conducted in this study, can yield continuous data that are more amenable to statistical analysis (Kassarjian 1977) and, in particular, allow the investigation of the interrelationships between characteristics of the alcohol message.

Categorizing Embedded Messages

Previous research on embedded messages in the content of audiovisual programming has identified several important characteristics of the message that affect how it is processed by the audience and therefore what impact it might have. Based on the nature of the audiovisual medium of television, messages have been categorized according to their modality of presentation and level of plot connection (Russell 1998). The visual dimension refers to a

product's screen time; the auditory dimension refers to verbal mentions in a dialogue; the plot connection dimension refers to the degree to which the product is integrated in the plot of the story. This typology has proven a useful method for classifying product placements and predicting the conditions under which a product included in an audiovisual program is remembered and attitudes affected (d'Astous and Seguin 1999; Russell 2002).

The extant research has shown that information is processed differently depending on how consumers are able to pay attention to them and assess their value (Krugman 1965; Petty and Cacioppo 1984; Petty and Wegener 1998; Russell 2002). When information is a central component of the content, people can engage in relatively effortful processing activity aimed at scrutinizing and uncovering its central merits (Petty and Wegener 1998). If the arguments of these centrally processed messages are compelling, they lead to more persuasion, but if the arguments are specious and can be easily countered, they lead to less persuasion. In contrast, in situations when people are unable or too distracted to scrutinize the information presented (Krugman 1965), such as with information that is secondary to the main message, they dedicate fewer cognitive resources to its processing. In such low-elaboration conditions, low-effort attitude change processes such as classical conditioning or the mere exposure effect can lead to persuasion.

Previous research on the processing of audiovisual information has shown that a message's modality (visual vs. auditory) and its level of plot connection are key factors affecting the ways viewers process it. The visual and auditory channels differ in how they are encoded because each modality of presentation contributes a different level of meaningfulness to a story. Because individuals can process auditory information in a television program even when they are not attentive to the visual information, the auditory modality serves as a conveyor of semantic meaning through speech (Rolandelli et al. 1991). In fact, compared with visual stimulation, auditory information is often characterized by its greater intrusiveness and intrinsic alerting properties (Posner, Nissen, and Klein 1976). Whereas the visual channel serves to create the context in which the story is set, the auditory channel is used for semantic processing to make sense of the narrative (Rolandelli et al. 1991). The modality of presentation of the alcohol message will thus affect how it is processed. Overall, auditory messages are more likely than purely visual messages to be processed centrally. However, previous research has also shown that visual messages are processed peripherally only if they are not connected to the plot; if they are connected to the plot, they become central components of the story (Russell 2002).

Plot connection refers to an item's degree of meaningfulness for the overall message or story. If a stimulus is more closely connected to the plot and thus more meaningful, it will become more integrated in an individual's cognitive structure and be processed more deeply (Lehnert 1981; Roberts, Cowen, and MacDonald 1996) and, in turn, it will generate greater recall (Craik and Lockhart 1972) and elaboration (Petty and Cacioppo 1984). For instance, cognitive psychologists studying children's processing of television programming have shown that central information was better recalled than incidental information because it is more meaningful to the show (e.g., Rolandelli et al. 1991). Although the dimension of plot connection has important implications in terms of how a message is processed, it has not been specifically accounted for in previous research on alcohol content on television.

RESEARCH QUESTIONS

In order to be able to assess what alcohol messages are being communicated to audiences, it is necessary to actively monitor the content of television programs. Although previous research indicates that modalities of presentation and levels of plot connection have different implications for how viewers might process messages in an audiovisual context (Roberts,

Cowen, and MacDonald 1996; Rolandelli et al. 1991; Russell 2002), these variables have not yet been integrated into existing analyses of embedded alcohol messages in television programming. Furthermore, the numerous influences on alcohol messages in television programs imply that the resulting messages may be mixed, with some depictions creating positive associations with drinking and others communicating negative consequences of drinking (Blair et al. 2005). The objective of this research was to provide an accurate and thorough assessment of how alcohol is portrayed in prime-time television programs. How prevalent is alcohol in prime-time television programs? How are positive and negative messages about alcohol conveyed? How do these messages map onto previously established dimensions of embedded messages (Russell 1998), and, given findings from previous research on the processing of audiovisual information, how might they be processed by the audience?

METHOD

Content Analysis

This research is a detailed content analysis, a methodology that provides a "scientific, objective, systematic, quantitative and generalizable description of communications content" (Kassarjian 1977, 10). Its goal is purely descriptive, allowing the identification of patterns and frequencies of occurrences (Carlson 2008). Content analysis is widely used in analyzing media productions and has proven especially useful in both understanding consumer behavior and informing public policy research (Avery and Ferraro 2000; Avery et al. 1997; Bang and Reece 2003; Berelson 1971; Kelly et al. 2000; Kolbe and Burnett 1991).

Program Sample

The sample was developed based on Nielsen's top-rated prime-time television series during the beginning of the 2004–2005 season. As in previous research, prime time was selected because it attracts the largest audience of viewers (Avery and Ferraro 2000; Avery et al. 1997). Programs were digitally recorded from five advertising-supported broadcast networks (NBC, ABC, CBS, Fox, and WB). Recording occurred over a ten-week period from September to December 2004. Episode repeats were eliminated from the sample so that only the new episodes of the selected series were coded. The final sample consisted of 144 unique episodes, 8 for each of the eighteen programs. The sample spanned genres and included five situation comedies (sitcoms), one cartoon, and twelve dramas (see Table 1).

Coder Training

Two coders, both with postgraduate education, were paid to independently view and code the sample episodes. Neither coder had seen the sample episodes prior to coding. Adequate coder training and ongoing monitoring are crucial to obtaining accurate and reliable information from a content analysis. Hence, the coders were trained for two months by a professional research associate, hired to oversee the project, on episodes not included in the sample. The phases of training included an orientation phase where coders reviewed the coding manual, procedures, and rules and where they were introduced to the electronic coding forms; a group practice coding phase where coders worked in dyads so they could compare their ratings and observe and discuss one another's coding abilities; and an individual practice phase where coders rated episodes individually and then discussed the results in group meetings moderated by the research associate. Data collected during the individual practice phase were assessed weekly for reliability using the procedures outlined in the next section. If reliability was poor (below .70 on more complex items or below .85 on less complex items), remedial group practice sessions were conducted until the acceptable level is achieved. When an acceptable level of consistency in coding was achieved, coding on the primary program sample began.

Intercoder Reliability

Twenty percent of the episodes in the sample were assigned to the two coders for independent coding and reliability assessment. After both coders' data had been recorded for reliability analyses, coders met along with the research associate to resolve any discrepancies in the two sets of ratings. Reliability assessments were conducted on an ongoing basis throughout the two months of training and approximately six months it took coders to complete the entire program sample. Since the content coding involved variables in the form of continuous scales (e.g., level of plot connection) and frequency counts or sums at the episode level, reliability analyses used the intraclass correlation coefficient. This statistic controls for agreement by chance that can inflate apparent consistency between coders (Krippendorf 1980). All the measured intraclass correlation coefficients for the episode-level variables were above the accepted level of .80 as provided in Table 2 (Kassarjian 1977).

Measures

In order to capture both specific and overall messages about alcohol, coding was conducted both at the interval and at the episode level. Variables coded at the interval level were then aggregated at the episode level so that all analyses could be conducted on the same basis: the episode. The episode-level analysis provides a holistic examination of the broader thematic issues that may not necessarily be captured by adding together information about individual intervals. It is important to characterize the overarching theme or pattern of alcohol messages that a particular episode conveys.

Coding procedures and measures were based on protocols used in previous alcohol content analyses (Avery et al. 1997; Pendleton, Smith, and Roberts 1991; Story and Faulkner 1990; Wallack et al. 1990) with some modifications. In previous alcohol content analysis research, the scene has often served as the basic unit of analysis (Breed and De Foe 1981; Wallack et al. 1990) while other research has coded for the aggregate number of alcohol depictions (Story and Faulkner 1990). One limitation of these approaches is that they do not capture the total exposure time of alcohol depictions in an episode. For instance, a complete scene might last two minutes, but an alcohol depiction in the scene may only last five seconds. This research seeks to more accurately measure visual alcohol displays so any depiction that was on screen for three continuous seconds was coded. The burden of making such detailed time notations was reduced as the programs were digitally recorded, which allowed for accurate time assessments. All alcohol appearances that occurred during the episode, including all opening and closing credits accompanied by content from the current episode (i.e., a final scene), were coded.

In accordance with the key dimensions of investigation, each alcohol occurrence was coded based on its modality (visual/auditory). Visual depictions are defined as those clearly depicting containers (e.g., beer, liquor or wine bottles, cans, flasks, and decanters), glasses generally associated with alcohol (e.g., martini glasses and champagne flutes), or alcohol signage. Each visual depiction was categorized as foreground or background incidental (e.g., restaurant customers drinking in the background), type of alcohol (beer, wine/champagne, cocktail, liquor, or other), setting (home, work, bar, party, restaurant, store, or other), and whether alcohol was consumed (actually being consumed or held). Auditory comments about alcohol were captured verbatim. Overall scores were computed at the episode level by counting the number of auditory references and by summing the amount of time alcohol appeared for each beverage category and each setting.

The relevance of alcohol to the overall story of the episode was measured at the end of the episode. Coders were instructed to assess the extent to which alcohol themes permeated the

episode taken as a whole, in terms of either its one central plot or its major parallel subplots or segments. In most series, the basic plot pattern involves a group of characters who cycle through stabilization to destabilization to restabilization. The objectives were to capture attention, create suspense, and satisfy viewer expectations (Esslin 1976). The level of plot connection captures the degree to which alcohol contributes to the advancement of the main or the subplot patterns. The measure for this overall assessment was a three-item plot connection scale from 1 (not at all) to 5 (very): (1) alcohol references are relevant to story; (2) without references to alcohol, the story would be different; and (3) alcohol is connected to the plot. The scale has been used extensively in previous product placement research (Russell 2002; Russell and Stern 2006) and demonstrates good reliability across a range of product categories ($\alpha > .80$).

The overall valence of the alcohol message was also assessed at the end of each episode, guided by the literature on positive and negative alcohol expectancies (Grube and Agostinelli 1999; Grube et al. 1995). That literature categorizes the many consequences of consuming alcohol into positive ones (e.g., having a good time without consequences) and negative ones (e.g., getting a hangover). Many studies have found that the two dimensions should be assessed independently (Grube and Agostinelli 1999; Grube et al. 1995), thus allowing for the possibility of dual messages. In line with that literature, coders rated the overall positivity of the alcohol message in the episode and the overall negativity of the alcohol message in the episode on two separate scales from 1 (not at all) to 5 (very).

FINDINGS

Overview of Alcohol Depictions

Alcohol is present in at least one episode of every program coded. However, a chi-square analysis comparing the number of episodes containing alcohol by program reveals significant differences, $\chi^2(17)=43.70$, $p<.05$. Alcohol is present in every episode of ten of the programs analyzed, in seven out of eight episodes of *CSI, CSI: Miami, Everwood, Law and Order*, and *The West Wing*; in six of the eight episodes of *Law and Order: Special Victims Unit*; and half the *CSI: New York* episodes. *7th Heaven* has the fewest number of episodes with alcohol, in three out of eight. Wine is the most prominent alcohol type visually displayed and is depicted as the sole alcohol type 39.9% of the time. Spirits are depicted 17.8% of the time followed by beer (11.4%). In the remaining instances (30.9%), several alcohol types are depicted in the same scene.

Overall, alcohol is actually consumed 58.6% of the time it is portrayed, and consumption is more frequently depicted when it is in the foreground (77.5% of the time) than when it is in the background (14.2% of the time). Another important finding is that major teenage (i.e., younger than 21 years) characters are present 21.1% of the time when alcohol is depicted, and actual consumption is depicted in half (50.0%) of the instances involving teenage characters.

The sample shows considerable diversity in the ways alcohol is depicted (see Table 3). To take into account the different lengths of the programs, rates per hour were computed for each visual and auditory measure. The rate of total amount of visual exposure significantly differs by program, $F(17, 126) = 12.20$, $p < .05$, as does the rate of background-only visual exposure, $F(17, 126) = 3.89$, $p < .05$, the overall level of plot connection, $F(17, 126) = 2.05$, $p < .05$, and the rate of audio references, $F(17, 126) = 2.40$, $p < .05$. Not only does the rate of overall visual exposure differ by program but also the nature of that exposure, as indicated by a significant interaction, $F(17, 126) = 7.03$, $p < .05$, between program and type of visual exposure (foreground/background). In some programs, the majority of the visual alcohol depictions are of the background type. In *Everybody Loves Raymond*, for example,

alcohol is visually present in every episode and is in the background 78.9% of the time (a wine rack always in Raymond's kitchen). In another instance, only one episode of *7th Heaven* includes visual depictions of alcohol but the visual display is more prominent (wine glasses on tables in a restaurant scene).

Alcohol Messages: Plot Connection and Modalities of Presentation

Alcohol messages were analyzed based on the visual, auditory, and plot connection dimensions. Plot connection scores were computed by averaging the three related scale items ($\alpha = .95$). Given that previous research has treated the level of connection to the plot and the modalities of presentation as distinct dimensions, a simple correlational analysis was first conducted to assess the degree to which the dimensions were indeed distinct. Although all correlations are significant (all ps $< .05$), there is only a small relationship ($r = .28$) between the rate of visual exposure and the rate of auditory references. That is, the two modalities are only modestly related but not completely orthogonal. A regression analysis reveals that the level of plot connection is related to both the overall rate of audio references and the overall rate of visual exposure (standardized beta coefficients .55 and .28, respectively, $p < .05$).

The proportion of auditory mentions does not differ by genre, $F(3, 140) = 1.91$, $p > .05$, but there are significant differences in the overall rate of visual alcohol depictions, $F(3, 140) = 22.80$, $p < .05$, and the background-only rate of visual depictions, $F(3, 140) = 9.08$, $p < .05$, by genre. Situation comedies display overwhelmingly more alcohol than any other genre, with an average rate of 6:56 visual depictions per hour (2:32 per twenty-two-minute episode including 0:54 depictions of background only). Soaps have an opposite pattern with a rate of 2:37 per hour (or 1:50 per forty-two-minute episode) but including only 0:12 depictions of background only per hour (0:08 per episode). Dramas contain the lowest rate of visual depictions, with crime/action dramas averaging 0:38 of visual displays per episode, including 0:15 background-only depictions and other dramas averaging 0:32 depictions per episode, with 0:05 background depictions. One possible explanation for the genre differences is the nature of the settings used in the program. Situation comedies all include a home as a major setting, as in Joey, whereas crime/action dramas such as the *CSI* or *Law and Order* series contain very few home scenes. Indeed, series with a home set include significantly greater rates of visual depictions than series without, 5:04 per hour compared to 0:49, $t(143) = 6.43$, $p < .05$. In particular, these shows differ in background depictions, 1:33 per hour versus 0:18, $t(143)$ 3.15, $p < .05$. There are no differences in the rate of auditory mentions, $t(143) = 0.59$, $p > .05$. Alcohol displayed in the background of home settings is primarily wine (49.1%) or hard liquor (40.3%).

As depicted in Figure 1, several situation comedies stand out as having a relatively large rate of alcohol visual exposure per hour: *Two and a Half Men* (13:53 per hour), *Will & Grace* (11:24 per hour), and *Joey* (6:11 per hour). At the high end of the alcohol portrayals spectrum is *Two and a Half Men* where an average twenty-two-minute episode contains over five minutes of visual depictions of alcohol, including 2:26 of actual alcohol consumption inside the home. The main character, Charlie (actor Charlie Sheen) consumes alcohol, of all types, in nearly every setting (home, bar, restaurant, etc.).

Finally, the nature of alcohol portrayals was compared between episodes in which teenage characters are involved in alcohol scenes and those in which they are not. There are no significant differences in levels of plot connection or proportion of auditory mentions (all $ps > .05$). However, episodes in which teenagers are involved in alcohol scenes have a greater rate of visual portrayals of alcohol, 16:48 per hour compared to 8:52, $t(143)$ 3.28, $p < .05$.

Valence of the Alcohol Messages

The correlation between positivity and negativity is low ($r = -2.19$, $p < .05$). On the aggregate, programs are more negative than positive, 1.86 versus 1.40, $t(125) = 3.48$, $p < .05$. However, programs differ significantly in how positive they are, $F(17, 108) = 2.00$, $p < .05$, but not in terms of how negative they are, $F(17, 108) = 1.66$, $p > .05$. The same pattern emerged when valences were compared across genres, with significant differences in positivity, $F(3, 122) = 3.36$, $p < .05$, but not negativity, $F(3, 122) = 1.74$, $p > .05$. Situation comedies and soap dramas convey the most positive messages about alcohol, especially *Two and a Half Men* and *Will & Grace*, whereas other dramas convey a less positive message. Series centered on a home setting communicate a more positive overall message about alcohol than series without a home setting, 1.53 versus 1.21, $t(124) = 2.69$, $p < .05$. The positivity and negativity of the alcohol message do not differ between episodes in which teenage characters are involved in alcohol scenes and those in which they are not ($p > .05$).

To assess the relationship between the valence of the overall alcohol message and the nature of the message, positivity and negativity scores were regressed on the audio and visual variables as well as their interaction with plot connection. As seen in Table 4, these analyses reveal an interesting pattern. Visual appearances are the only factor contributing to a positive message. Furthermore, the significant but negative visual × plot connection coefficient indicates that it is not high plot visual appearances but low plot ones that contribute to an overall positive alcohol message. Indeed, across all the episodes where alcohol is present, overall positivity of the message is significantly related to the amount of time alcohol appeared visually ($r = .40$, $p < .05$) and, more specifically, with the amount of time alcohol appeared visually only in the background ($r = .18$, $p < .05$). This analysis indicates that whenever positive messages (i.e., fun, relaxation, social acceptance) are communicated about alcohol, they are subtle and visual in nature. For instance, numerous episodes of *The O.C.* depict underage party scenes with alcohol associated with fun activities. However, many of these scenes are short and transitory and have nothing to do with the overall episode plot.

The regression results for negativity indicate a significant two-way interaction between the auditory mentions and the level of plot connection. Therefore, whenever alcohol is verbally discussed and comprises a central tenet of the plot, the resulting message is more negative in nature (i.e., drunk driving, addiction, death). For example, one entire, and very dramatic, episode of *ER* focuses on an alcoholic who is dying as a result of his excessive drinking and who is trying to make amends to his family for the impact his alcoholism had on their relationship. In another instance, an episode of *NYPD* Blue focuses on a main character's continual poor work performance and relations with others due to his excessive drinking. His drinking is discussed (e.g., “Most of the days you are half asleep and hung-over. You have to get your head on straight John, until then I can't trust you”), and his problems comprise a major part of the plot.

DISCUSSION

The content analysis of eighteen prime-time television programs from the 2004–2005 season shows that alcohol is present in every program investigated. This represents a notable increase over previous content analysis findings that 77% prime-time television programs from the 1998–1999 season contained some reference to alcohol (Christensen, Henriksen, and Roberts 2000). In contrast to previous analyses, however, messages about alcohol are found to be, on the whole, more negative than positive (Christensen, Henriksen, and Roberts 2000). The analysis also uncovers that the positivity and negativity dimensions are only modestly correlated and that the valence of the alcohol message is directly related to the way that message is communicated. An overall more negative message about alcohol is related to

verbal discussions that affect the plot of the episodes, whereas an overall more positive message is related to visual depictions of the background type. In particular, whenever alcohol is central to the plot of an episode, it tends to be associated with negative elements such as a crime, addiction, or lowered job performance. Overall, messages associating alcohol with positive outcomes, such as having fun or partying hard, are primarily communicated visually in the background.

Therefore, a major finding of this content analysis is that prime-time television series convey mixed messages about alcohol, but positive and negative messages are communicated differently: the primary, more central, alcohol message is more often negative but the secondary, more subtle, message is almost always positive. There is therefore a possibility that the positive messages undermine the negative messages. A detailed content analysis cannot and should not address to what extent depictive meanings are internalized by viewers (Carlson 2008). Previous research does suggest, however, that more deeply processed messages, by nature, are more scrutinized by the viewers and can prompt them to think about the reason for the messages' presence in the program (Cowley and Barron 2008). In contrast, positive messages depicted visually in the background are likely to receive less scrutiny and thus may be less likely to raise suspicion (Krugman 1965; Petty and Cacioppo 1984). Evaluating differences in how positive and negative embedded messages are processed requires further empirical research to specifically assess the effects on audiences. Future research should also incorporate differences in viewers' levels of involvement with the programs (Krugman 1965) or connectedness with its characters (Russell, Norman, and Heckler 2004). Based on theories of social learning (Miller and Dollard 1941) and behavioral modeling (Nord and Peter 1980), these variables are likely mediators and moderators of the processing and thus influence of the embedded messages on audiences.

Given the many forces that affect the nature of embedded alcohol messages in television series, the finding that the central story lines of the episodes are more likely to communicate negative associations of drinking suggests that industry efforts are spawning more entertainment–education platforms to convey the potential risks associated with alcohol consumption. However, this trend must be interpreted cautiously since, as this study has found, the underlying message about alcohol consumption is positive. Because many of the alcohol portrayals are unbranded, it is impossible to pinpoint exactly the source of these messages, but alcohol advertisers' active presence in the product placement industry (Russell and Belch 2005) is a clear sign that they welcome and encourage the use of their products on television studios' sets.

In conclusion, this research serves to objectively and independently monitor embedded alcohol messages, as recommended by the US Surgeon General (USDHHS 2007) and other organizations concerned about the public health implications, like The Center on Alcohol Marketing and Youth (Jernigan, Ostroff, and Ross 2005). In particular, there have been calls for stringent government regulation of alcohol marketing to limit youth audience exposure to alcohol messages in an attempt to reduce the significant health and safety consequences resulting from youth alcohol consumption (Hacker 1998; Hill and Casswell 2001; Mosher 2006). For now, the industry is self-regulated (Mosher 2006), and while content analysis findings alone cannot establish whether the alcohol industry is responsible for the positive messages and entertainment–education efforts for the negative messages, studies like this one can nonetheless inform decision makers and advocates alike about the nature of alcohol messages in widely viewed programming.

Acknowledgments

This research was supported by grant number R21 AA014897 from the National Institute on Alcohol Abuse and Alcoholism. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute on Alcohol Abuse and Alcoholism or the National Institutes of Health.

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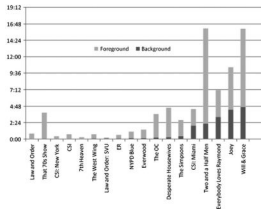

FIGURE 1.
Visual Depictions of Alcohol by Program and by Type (Rates per Hour)

TABLE 1

Distribution of Program Sample

Program Genre (Length)	Series Name (Season)
Drama, action/crime (1 hour)	CSI (S5)
	CSI: Miami (S3)
	CSI: New York (S1)
	Law and Order (S15)
	Law and Order: Special Victims Unit (S6)
	NYPD Blue (S12)
Drama, soap (1 hour)	7th Heaven (S9)
	Desperate Housewives (S1)
	The O.C. (S2)
Drama (1 hour)	Everwood (S3)
	ER (S11)
	The West Wing (S6)
Situation comedy (30 minutes)	Everybody Loves Raymond (S9)
	Joey (S1)
	That 70s Show (S7)
	Two and a Half Men (S2)
	Will & Grace (S7)
	The Simpsons (S16)

Note: Program genres based on categorizations provided by CNET Networks Entertainment.

TABLE 2

Interrater Reliability Analyses on Major Variables (Intraclass Correlation Coefficient)

	Intraclass Correlation Coefficient
Measure	
Overall level of plot connection of alcohol in episode	.94
Overall valence of alcohol portrayal in episode	.92
Total number of audio references in episode	.89
Total number of audio references in episode by valence	.90
Amount of time	
Any alcohol foreground visual or foreground and background (home setting) drinking	.90
Background incidentals only—any alcohol (bar setting)	.83
Background incidentals only—any alcohol (store setting)	1.00
Total foreground and background bar setting	.96
Total foreground and background restaurant setting	.82

TABLE 3

Alcohol Portrayals by Dimension (Episode Mean for Each Program)

Program	Total Screen Time (Minutes:Seconds)	Total Number of Audio References	Level of Plot Connection
7th Heaven	0:08	0.25	1.13
CSI	0:27	2.63	2.08
CSI: Miami	1:41	4.13	2.58
CSI: New York	0:17	0.63	1.54
NYPD Blue	0:41	7.50	2.79
Everybody Loves Raymond	1:26	1.50	2.46
The O.C.	2:23	4.00	2.83
Will & Grace	4:10	2.50	2.58
Everwood	0:51	1.63	2.29
Joey	2:16	2.25	2.00
ER	0:21	3.67	2.30
Law and Order	0:34	2.00	1.50
Law and Order: Special Victims Unit	0:06	2.13	1.54
The Simpsons	0:51	1.13	2.21
Desperate Housewives	2:59	3.13	2.33
That 70s Show	1:25	2.75	1.75
The West Wing	0:27	0.88	2.25
Two and a Half Men	5:05	2.50	2.88

TABLE 4

Regression Results (Standardized Beta Coefficients)

	Dependent Variables	
Independent Variables	**Positivity**	**Negativity**
Visual	.687*	−.085
Audio	−.137	−.147
Visual × audio	.483	−.691
Visual × plot connection	−.404*	.155
Audio × plot connection	.095	.648*
Visual × audio × plot connection	−.453	.629

*Significant at $p < .05$.