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Nature and Impact of Alcohol Messages in a Youth-Oriented Television Series

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Abstract

This research contributes to the extant literature on television influence by pairing a stimulus-side approach documenting how information is presented within a TV series with a response-side assessment of whether connectedness and exposure to a series influence the processing of that information differently depending on its format. The inquiry focuses on the nature and impact of messages about alcohol contained within a youth oriented TV program. The findings indicate that the recall and perception of the more overt negative messages increase with exposure and that receptiveness to the subtle and less remembered positive messages increases with levels of program connectedness. Highly connected viewers are both more receptive to and in greater agreement with the underlying positive alcohol message communicated in the series.

This research contributes to the extant literature on television (TV) influence by pairing a stimulus-side inquiry that documents how information is presented within a TV series with a response-side assessment of differences in the impact of exposure to and audience connectedness (Russell, Norman, and Heckler 2004) with a series on the processing of that information differently depending on its format. Specifically, the inquiry focuses on the nature and impact on viewers of alcohol messages in the content of a youth-oriented television series. Of the many media sources, TV programming is regarded as an influential source through which people acquire knowledge and learn about social behaviors (Collins et al. 2003), and, in particular, through which youth develop beliefs and attitudes about drinking (Gerbner 1995; Stockdale 2001; Villani 2001). A Centers for Disease Control (CDC) analysis of 3,719 TV viewer surveys found that 57% of viewers acquired health-related knowledge from watching daytime and/or prime-time dramas (Beck et al. 2003). Relatedly, viewers who spend more time consuming mass media have been found to maintain health and nutritional beliefs that are contradictory to reality and that could therefore result in unhealthy behaviors (Avery et al. 1997; Signorielli 1993).

Assessing the impact on audiences of information contained in TV series requires a two-sided approach: a stimulus-side analysis to document the nature of the messages being communicated and a response-side investigation to assess the audience's processing of and receptiveness to these messages. Stimulus-side inquiries are widely used in analyzing media productions (Avery et al. 1997; Berelson 1971). These approaches prove especially useful in

both understanding consumer behavior and informing public policy research (Kassarjian 1977). Systematic analyses of the content of embedded messages in TV programming can help uncover the meanings associated with different types of consumption (e.g., see Sherry 1995) and in turn offer insights into their impact on audiences (Signorielli 1993; Stern and Russell 2004).

Response-side research incorporates the nature of the messages but also audience characteristics. Extant research suggests that several important characteristics of the viewers could impact the compounded effect of viewing a series over a long period of time. First, the cultivation paradigm (Gerbner et al. 1980) posits that cumulative exposure to particular media messages relates to viewers' perceptions of the prevalence of certain behaviors. For instance, O'Guinn and Shrum (1997) showed that heavy viewers of a series had a higher ease of retrieval of relevant examples of affluence and greater estimates of prevalence of products and activities associated with affluent lifestyle. Second, another important factor that affects viewers' receptiveness to messages in TV series beyond exposure is connectedness with a TV series and its characters (Russell Norman, and Heckler 2004). Connectedness studies have established that the parasocial relationships viewers develop with TV characters (i.e., their connectedness) make them especially susceptible and receptive to even the subtle consumption imagery in the series (Russell and Puto 1999; Russell and Stern 2006). Therefore, a response-side inquiry of the messages contained in a TV series should account for different levels of exposure and connectedness over the length of the series.

This research contributes to the extant literature on TV influence by pairing a stimulus-side inquiry that documents how information is presented within a TV series with a response-side assessment of whether connectedness and exposure to a series influence the processing of that information differently depending on its format. The inquiry focuses on the nature and impact of messages about alcohol contained within a youth oriented TV program. This focus is important for two key reasons. First, not only are alcohol messages abundant in TV series (e.g., Christensen, Henriksen, and Roberts 2000; Mathios, Avery and Shanahan 1998; Pendleton, Smith, and Roberts 1991; Wallack et al. 1990), they are also complex, portraying alcohol consumption positively (Hundley 1995) or negatively (Singhal et al. 2004). Identifying the ways in which positive and negative messages are communicated can help illuminate the likely mechanisms through which they affect the audience. Second, as evidenced by the long line of previous advertising research on the topic (Fox et al. 1998; Mosher 1994; Wolburg 2001), policymakers are concerned about the societal impact of alcohol on America's youth (Leavitt 2006). Alcohol is the most consumed substance of abuse and the leading source of incidents which result in death for those under age 21. Underage drinking is particularly problematic because young drinkers tend to drink more heavily than adults (Wolburg 2001). Young audiences are susceptible to TV influences as they use TV portrayals as a tool to understand adult behaviors which they seek to emulate (Boeknke, Münich and Hoffmann 2002). Therefore, as recently expressed by the US Surgeon General, new efforts should be undertaken to better monitor and regulate alcohol messages contained within TV programs, especially those likely to be viewed by young audiences (USDHHS 2007).

Research Objectives

This research extends previous work on the influence of TV programs (O'Guinn and Shrum 1997; Russell, Norman and Heckler 2004) to study the different impacts of exposure and connectedness to a series on viewers' processing of information contained in the series and the effects on memory and persuasion. Specifically, the purpose is to assess the nature and impact of messages about alcohol conveyed in a TV program popular with teenagers and

young adults. The research pairs a stimulus-side approach documenting the nature and valence of alcohol messages in the series with a response-side survey of young viewers' perceptions of and responses to these alcohol messages. A stimulus-side approach simply provides a description of whether and how positive and negative messages about alcohol are communicated (Carlson 2008). However, combined with response-side data, the two-sided approach allows an empirical test of how exposure and connectedness to the series affect the ways viewers interpret the positive and negative alcohol messages, and how these messages relate to their own alcohol attitudes, beliefs and behaviors.

Study 1: Documenting Alcohol Messages

Portrayals of alcohol consumption and alcohol product placements are frequent in TV programming (Austin and Meili 1994; Christensen, Henriksen, and Roberts 2000; Diener 1993; Hundley 1995; Mathios, Avery and Shanahan 1998; Parsons, Rissel, and Douglas 1999; Pendleton, Smith, and Roberts 1991; Story and Faulkner 1990; Wallack et al. 1990). One study of prime-time TV found that 71% of all programming depicted alcohol use and 77% contained some reference to alcohol (Christensen, Henriksen, and Roberts 2000). A more recent content analysis of eighteen programs showed an increased presence of alcohol messages in the content of prime-time series, as every program contained visual alcohol portrayals and verbal alcohol references (Russell 2006). Some series, such as *Two and a Half Men*, were found to contain a plethora of alcohol messages; a concerning finding given the popularity of these series with young audiences (Posner 2004).

Complicating the issue is the fact that TV series can portray alcohol consumption as an overall positive experience or as a negative one. TV programs frequently treat drinking as humorous and associate it with valued outcomes such as camaraderie (Hundley 1995). However, drinking is at times associated with negative outcomes, such as regrettable sexual intercourse, addiction, accidents, and death. These negative messages about drinking may reflect increasing entertainment-education efforts in TV programs, meant to promote healthy and socially responsible behaviors (Singhal et al. 2004). Often, however, both positive and negative messages about alcohol co-exist within a single program or episode, just as those regarding smoking (Pechmann and Wang 2008). A recent study of the reality program *The Osbournes* showed that a main character was at times endorsing alcohol while at other times he was depicted rejecting it (Blair et al. 2005). These mixed messages appear to be on the rise. In the 1998-99 season (Christensen, Henriksen, and Roberts 2000), positive experiences were portrayed more often than negative ones (40% vs. 10%), whereas in the 2004 season, programs were found to be, on the whole, more negative than positive and there was no correlation between positivity and negativity (Russell 2006). The dual valence of alcohol messages is important in identifying effects on audiences because of the distinction, in alcohol research, between positive and negative alcohol expectancies, the beliefs about the personal consequences of consuming alcohol. Not only are alcohol expectancies good predictors of drinking behavior, but positive and negative expectancies are also found to operate independently (Grube et al. 1995; Grube and Agostinelli 1999).

In order to assess how positive and negative messages are interpreted by audiences, it is necessary to document the nature of each type of message. Differently presented messages may be differently processed by viewers and in turn differently impact their own alcohol expectancies. Previous research on products embedded in the content of TV programs (Russell 2002) proposed a typology consisting of two perceptual dimensions (visual and auditory) and a semantic dimension (level of connection of the product to the plot). The typology allows a classification of product placement types and an assessment of their processing and persuasive implications. For instance, messages that are more linked to a story's macrostructure invoke semantic processing (Roberts, Cowen and MacDonald 1996),

which is deeper than non-semantic processing and leads to greater recall (Craig and Lockhart 1972). Messages that play an important role in the plot, especially if they are mentioned verbally in the script, are more salient and thus processed more deeply (Russell 2002). On the other hand, visual messages that are not connected to the plot were found to result in low recall but were persuasive nonetheless, because they involve low-effort processing.

The research questions addressed in study 1 are as follows:

RQ1: What is the nature and prevalence of alcohol messages being communicated in the TV series, based on the tripartite typology of visual, audio, and plot connection?

RQ2: How do positive and negative messages about alcohol differ in the way they are communicated?

RQ3: What characters are most associated with alcohol? In particular, how much drinking involves underage characters?

Content Analysis Method

Content analysis provides a “scientific, objective, systematic, quantitative and generalizable description of communications content” (Kassarjian 1977, p. 10) and is the method of choice for stimulus-side inquiries. In this study, three seasons of *The O.C.* were analyzed in full to provide a detailed analysis of alcohol depictions to which long-time viewers would have been exposed. In total, 76 unique episodes were analyzed, each averaging 42 minutes in length.

Context of The O.C.—*The O.C.* made its debut in 2003, quickly becoming the highest-ranked new drama in the 12-17 and 18-34 age segments (Posner 2004). It is named after Orange County (O.C.) in Southern California where the program is situated and primarily filmed. Alcohol depictions are ever present in the program and alcohol plays a prominent role in the program's storyline. Three major alcohol-related storylines surround Ryan, a teenage boy who is the main character: first is the re-emergence of his alcoholic mother who wreaks havoc upon her return; second, is when his adoptive mother (Kirsten) becomes an alcoholic, tears apart her family, has a major alcohol related vehicle crash and then lands in rehabilitation; and third, is when his quasi girlfriend (Marissa) also becomes an alcoholic, thereby negatively affecting those around her. Relatedly, an admirer of Marissa dies after falling from a cliff while professing his feelings during a drunken stupor, and Marissa dies after an intoxicated jealous ex-boyfriend rams her car off the road. There are also numerous alcohol-related subplots presented throughout the series.

Coding Process—Two coders independently viewed and coded the episodes. Neither coder had seen the episodes prior to coding. The coders spent a total of sixty hours training over a period of two months. The phases of training included orientation to coding and the codebook, group coding, and individual practice coding sessions where coders assessed shows and then discussed the results in group meetings. Data collected during the individual practice phase were assessed for reliability before coding began.

In previous content analysis research, the scene has often served as the basic unit of analysis (Wallack et al. 1990). This approach is limited because it does not capture the total exposure time of alcohol depictions in an episode; a complete scene might last three minutes, but an alcohol depiction in the scene may only last fifteen seconds. In order to more accurately codify alcohol depictions and allow for more detailed analysis, this research used exact measurement: alcohol depictions were coded if the depictions were on screen for two continuous seconds. A two-second lapse between alcohol depictions constituted a new

coding instance. Digital recording of the programs ensured detailed time notations and accurate time assessments.

Measures—Coding was conducted at both the interval and the episode level. Coding operations were based on protocols and variables used in previous alcohol content analysis research (Parsons, Rissel, and Douglas 1999; Avery et al. 1997; Pendleton, Smith, and Roberts 1991; Wallack et al. 1990; Story and Faulkner 1990) and additional coding categories were developed by the authors. Alcohol depictions are defined as those clearly showing containers (e.g., alcohol cans or bottles, decanters). Depictions containing glasses generally associated with alcohol (e.g., martini glasses and champagne flutes) and alcohol signage within the program (e.g., a billboard for Dos Equis) were also coded. All instances of alcohol depictions 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.

Alcohol messages were coded by type (beer, wine/champagne, cocktail, liquor, or other), scene setting, character involved, drinking activity (consuming, holding, next to), and whether underage drinking was involved. Each alcohol occurrence was coded based on its modality (audio and/or visual). The visual depictions were categorized as foreground (e.g., focal character drinking) and/or background (e.g., restaurant customers drinking in the background). Verbatim alcohol-related comments were captured and valence-coded. For example, a statement that alcohol provides a “good buzz” would be coded positive (+1); a statement that alcohol caused a “bad hangover” would be coded negative (-1); and a statement such as “let’s get a drink” would be coded neutral (0).

At the episode level, several measures were obtained regarding the overall depiction of alcohol in the episode. Based on the alcohol expectancy literature (Grube et al. 1995), coders dichotomously coded whether each of eight positive and eight negative outcomes were depicted in the series (see appendix 1). Lastly, the relevance of alcohol to the overall storyline was measured using a plot connection scale previously developed to capture the contribution of scenes to the advancement of the main or the sub-plot patterns in films (Cowen and Lebel 1998; Roberts, Cowen and MacDonald 1996). The instrument has demonstrated good reliability in previous research (Russell 2002); it is comprised of three items anchored by 1- not at all and 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.

Inter-Coder Reliability Analyses—To ensure the quality of the nominal data, a randomly selected subset of twenty percent of the episodes in the sample was assigned to both coders for independent coding and reliability assessment. Reliability was checked using Rust and Cooil's (1994) proportional reduction in loss (PRL), an approach that takes into account the proportion of interjudge agreement, the number of categories coded, and the number of coders. The interpretation of the PRL is similar to Cronbach's alpha; in this research, all PRLs were above the recommended level of .70 for acceptable reliability. For the coded variables with two categories, PRLs exceeded .73 (e.g., .87 or above for negative outcomes; .77 or above for positive outcomes). PRLs were also acceptable for the coded variable with three categories (valence of auditory reference, .85) and for the coded variable with five categories (plot connection, .98). Coding disagreements were resolved by discussion after having the coders view the scenes together.

Findings

RQ1: Nature and Prevalence of Alcohol Messages—Alcohol messages in the program were analyzed on the basis of the three dimensions of the tripartite typology of

products embedded in the content of TV series (Russell 2002). Visual portrayals were computed as the amount of time alcohol was seen in the episode. Two sub-scores were also computed: one reflecting the amount of time alcohol was visually seen in the background only and the other when alcohol was visually seen in the foreground. On average, each 42-minute episode included 4:01 minutes of visual depictions, of which 2:39 minutes were in the foreground. Actual consumption of alcohol was depicted 32.7% of the overall time and alcohol was held by or in close proximity of a character 47.8% of the time. The complete findings are reported in Table 1.

Audio mentions were calculated as the total number of alcohol references in each episode. Each episode included an average of 4.58 verbal references. Two sub-scores were also computed to reflect the number of positively and negatively valenced alcohol references. An average of 1.63 references per episode were negative (e.g., “I am scared, he is drunk and he is acting like a crazy person” or “I am worried about how much you have been drinking”) and 0.80 references per episode, on average, were positive (“You can’t play golf without a buzz” or “With a couple of cocktails and the right attitude, it could be fun”). The remainder was coded as neutral (e.g., “Would you like another glass of merlot?”).

Plot connection scores were computed by averaging the three related scale items ($\alpha = .98$). Episodes varied in levels of plot connection ($M = 3.02$; $SD = 1.46$) but the most frequent type was high plot connection (Mode = 5), and 35.5% of the episodes rated 4 or above.

Of the 76 episodes, 89.5% depicted at least one positive outcome of drinking whereas 60.5% of the episodes depicted at least one negative outcome. Overall, 34.3% of the episodes with alcohol depicted positive outcomes only whereas only 2.9% of the episodes depicted negative outcomes only. 62.8% of the episodes with alcohol included both positive and negative messages about drinking. The most common message about alcohol in the episodes was feeling relaxed (76.3%), followed by having fun (35.5%). Other positive messages included having an easier time expressing feelings (25%), feeling happy (19.7%), feeling good (18.4%) and having an easier time talking to people (14.5%). With regards to the negative messages, 30.3% of the episodes related alcohol to doing something one would regret and 28.9% to feeling sad. Other negative messages included embarrassing oneself (19.7%), getting a hangover (17.1%) or getting in trouble with the police (14.5%). Although heavy drinking is regularly portrayed in *The O.C.*, negative health outcomes were the least depicted messages.

RQ2: The Manner in Which Positive and Negative Messages Are

Communicated—Testing RQ2 requires an assessment of whether and how the valence of the overall alcohol message is related to the modality of presentation of the alcohol message and its level of plot connection. Across all of the episodes, overall positivity of the message was correlated with the amount of time alcohol appeared visually ($r = .36, p < .05$) and, more specifically, with the amount of time alcohol appeared in the background ($r = .27, p < .05$). Positivity was not related to the amount of time alcohol appeared in the foreground, the number of audio references, or the level of plot connection (all $ps > .05$). Conversely, overall negativity of the message was correlated with the number of audio references ($r = .54, p < .05$) and the level of plot connection ($r = .81, p < .05$). Although there was no relationship between negativity and the *overall* amount of time that alcohol appeared visually, negativity was positively related to the amount of time alcohol appeared in the foreground ($r = .29, p < .05$) but negatively related to the amount of time alcohol appeared in the background ($r = -.29, p < .05$).

RQ3: Character Association with Alcohol—Visual displays of alcohol most often included the two main adult characters, Kirsten (38.8% of the time) and Sandy (32.9% of the

time). Julie, another adult, appeared 24.6% of the time when alcohol was seen. The two main male teenage characters, Ryan and Seth, were present in alcohol scenes 26.1% and 24.5% of the time respectively, while the two main female teenage characters, Marissa and Summer, were present in 19.6% and 14.4% of the alcohol scenes. A significant finding is that 6.3% of alcohol consumption time involved one of three main female characters drinking alone. Interestingly, the characters with alcohol problems were all female and the drink of choice for two of the main characters (Marissa and Kirsten) was straight vodka, often consumed alone and in great quantities, as a coping mechanism. For instance, Marissa was depicted drinking alone 2.0% of the entire time alcohol consumption was visually depicted throughout the three seasons.

Significantly, 55.3% of the episodes depicted underage drinking situations, a proportion much greater than those reported in any previous content analyses (Christensen, Henriksen, and Roberts 2000; Mathios, Avery and Shanahan 1998). Generally, youth alcohol consumption scenes were associated with independent, good looking people having a good time without consequence. This finding presents a departure from previous research which found that drinking in TV series was more common amongst adults than teenagers (Wallack et al. 1990) and that it was adult characters associated with alcohol who tended to be depicted as affluent, attractive and glamorous, whereas adolescents drinking were mainly depicted in a negative light (Mathios, Avery and Shanahan 1998).

Discussion

The content analysis revealed that alcohol is prevalent in *The O.C.*, with an average of almost four minutes of alcohol visual depictions and over four verbal references to alcohol per episode. Furthermore, almost all episodes contained positive messages about alcohol (i.e., fun parties, relaxation, social events, etc.) and, whereas positive messages were conveyed visually, and mainly through the use of low plot / background visual depictions, negative messages (i.e., drunk driving, addiction, death, etc.) were usually discussed in the script and tended to be highly tied to the plot of the episode. It was also found that the majority of the episodes depicted alcohol both positively and negatively. Hence the messages are often mixed with overt anti-alcohol messages stemming mainly from auditory discussions that are connected to the plot and covert pro-alcohol messages more often visual and of the background type.

There are two main implications from this stimulus-side inquiry. First, the different ways in which positive and negative alcohol messages are communicated in the series suggest differences in their impact on the audience. Based on previous research, the more central negative messages should invoke semantic processing (Roberts, Cowen and MacDonald 1996) and be more easily recalled (Craik and Lockhart 1972; Russell 2002), whereas the more subtle positive messages may be less noticeable but could still influence audiences via low-effort processing (Russell 2002). Second, the finding that alcohol depictions in this youth-oriented series are often associated with aspirational underage drinkers is important given the likelihood for young viewers to treat TV characters as referent others and emulate their behaviors. Previous research has shown that parasocial referents who are associated with certain consumption patterns, such as smoking, can impact viewers' attitudes and intentions, especially if they identify with them (Pechmann and Wang 2008). Therefore, it is likely that as viewers become more connected to the characters in the series, the attitudes and behaviors depicted by these characters will have even more impact on their own opinions and behaviors. The likely processing and persuasive differences between positive and negative messages and the potential moderating role of audience connectedness form the basis for the response-side study to complement the content analysis phase.

Study 2: Alcohol Messages and Viewers' Drinking Attitudes, Beliefs, and Behaviors

Study 2 was conducted to examine the differences in how viewers perceive the positive and negative alcohol messages in *The O.C.* and in turn how those perceptions relate to their own drinking attitudes and beliefs. A cross-sectional survey of sample of young viewers assessed their recall and perceptions of the alcohol messages in the series and tested the relationships to their real life alcohol attitudes and beliefs. The compounded impact of the series is investigated by assessing not only the effect of exposure to the series but also the moderating role of the viewers' level of connectedness to the series and characters.

Conceptual Framework

The theoretical framework guiding this study is derived from the reception-yielding model of persuasion (McGuire 1968). The reception-yielding model posits that persuasive messages are processed in two information-processing stages: the reception stage focuses on attention to and understanding of the message communicated and the yielding stage on acceptance (or rejection) of the message. Predictions regarding the reception of alcohol messages in the program integrate existing findings on product placement effects (Russell 2002), cultivation research (Gerbner et al. 1980, O'Guinn and Shrum 1997) and audience connectedness (Russell and Puto 1999; Russell, Norman and Heckler 2004). Previous research has shown that primary information in a narrative is more meaningful and thus better recalled than secondary information (Roberts, Cowen and MacDonald 1996). Research conducted in the context of products placed in TV series showed that, unlike subtle visual placements, highly salient ones, especially if they are connected to the plot, are more noticed and remembered (Russell 2002). The amount of exposure to the series should increase the likelihood of remembering these salient messages but also, based on cultivation research (Gerbner et al. 1980), the general perception of prevalence of these messages. Thus, it is expected that, the more people have been exposed to the program, the more negative alcohol events they would recall and the greater their perceptions of the negative alcohol messages communicated in the program. Therefore,

H1: Exposure to the program is positively related to the recall of negative alcohol events in the program.

H2: Exposure to the program is positively related to viewers' perceptions of the negative alcohol message in the program.

The subtle positive messages, on the other hand, may not be explicitly remembered (Russell 2002), even with increased exposure to the program. In other words,

H3: Exposure to the program is not related to viewers' recall of positive alcohol events in the program.

However, previous research on audience connectedness (Russell, Norman and Heckler 2004) suggests that these subtle messages may still be processed by those viewers who are highly connected, an issue addressed next.

Role of Connectedness—Connectedness to TV characters refers to the intensity of the relationships viewers develop with programs and the characters in those programs, in a parasocial TV environment (Russell and Puto 1999). Connectedness studies have established that the relationships viewers develop with TV characters drive the viewers' own consumption experiences and beliefs about consumption (Russell and Puto 1999; Russell and Stern 2006) and that connectedness affects the processing of program-related

information occur above and beyond mere exposure to the program and involvement with the program (Russell, Norman and Heckler 2004). The extant research thus indicates that connectedness may affect how viewers process alcohol messages in TV programs (reception) and how these messages are related to the viewers' beliefs and attitudes (yielding).

Because of the strong relationships they enjoy with the characters in the program, highly connected viewers are likely to consider the program content part of their world and to internalize the messages contained within it. Thus connected viewers should be receptive to the subtle positive messages:

H4: Connectedness to the program is positively related to viewers' perceptions of the positive alcohol message in the program.

Highly connected viewers are also more likely to mold characteristics of their own life after what they see in the program because the characters are viewed as positive referent others (Pechmann and Wang 2008; Russell and Puto 1999). Therefore, viewers who feel strongly connected should be more impacted by the alcohol messages in terms of their own opinions about drinking and attitudes toward drinkers. Thus it is proposed that connectedness will increase acceptance of the alcohol messages in the program and affect the viewers' own alcohol beliefs and attitudes accordingly.

Specifically, it is proposed that negative perceptions of alcohol in the program would be related negatively to attitudes towards drinkers and, because the negative alcohol message is so salient, this relationship is expected to be significant regardless of connectedness levels.

H5: Negative perceptions of alcohol in the program are negatively related to viewers' attitudes toward drinkers, regardless of their connectedness levels.

It is also hypothesized that positive perceptions of alcohol in the program would be positively related to attitudes towards drinkers. However, because the positive alcohol messages are more subtle, this relationship is expected only for highly connected viewers.

H6: Connectedness moderates the relationship between positive perceptions of alcohol in the program and viewers' attitudes toward drinkers.

The same pattern of effects is proposed with regards to viewers' own positive and negative beliefs about alcohol: the more viewers perceive that *The O.C.* communicates negative drinking outcomes, the more they believe that alcohol is related to such negative consequences in real life regardless of connectedness levels and the more they perceive that *The O.C.* communicates positive drinking outcomes, the more they believe that alcohol is linked to positive consequences in real life, if they are highly connected. In other words:

H7: Negative perceptions of alcohol in the program are positively related to viewers' viewers' negative alcohol expectancies, regardless of their connectedness levels.

H8: Connectedness moderates the relationship between positive perceptions of alcohol in the program and viewers' positive alcohol expectancies.

Finally, the extant alcohol literature has shown that attitudes and beliefs about drinking are associated with actual drinking behavior (Grube et al. 1995; Grube and Agostinelli 1999), and the same pattern is expected here.

Methodology and Sample

The study was conducted just before the beginning of the series' fourth season. Participants were recruited at two public US universities, one located in Southern California and the other located in the Midwest. Although university students generally comprise convenience samples, they represent a large portion of the program's audience and include both underage drinkers and legally aged young drinkers. An invitation to participate in a survey about *The O.C.* was circulated electronically. A gift certificate to a national retailer was offered as an incentive for participation. The survey was computer-based and conducted individually. The final sample was comprised of 207 participants (147 females; 77 Midwesterners). The mean age was 21.7 and 36.7% of the sample was under the age of 21.

The initial survey questions asked the respondents about their experience watching *The O.C.* by indicating the percentage of the 76 episodes shown over the past three seasons they had seen and how often they watch the program. A series of Likert-like scale item questions followed concerning their attitude toward the program (three items on a seven-point scale: likeable – not likeable, cool – uncool, good – bad; $\alpha = .91$), involvement with the program (six items on a seven-point scale, relevant – irrelevant, exciting – unexciting, interesting – boring, important – unimportant, appealing – unappealing, involving – uninvolved; $\alpha = .90$), and Russell et al.'s (2004) connectedness with the program (statements such as “I relate what happens in *The O.C.* to my own life,” or “I would love to meet the characters of *The O.C.*” anchored by 1- strongly disagree and 5 – strongly agree; $\alpha = .90$).

Participants were then asked more specifically their perception of alcohol portrayals in the program. They were first asked to describe up to ten instances of alcohol having been depicted in the program. They then indicated the extent to which they felt that alcohol was linked to each of eight positive and eight negative outcomes in *The O.C.* (see appendix 1; items were anchored by 1- very rarely and 5- very often; α s = .89 and .78 respectively). This measure is commonly used in alcohol research and displays good levels of reliability (Grube et al. 1995). The level of perceived alcohol plot connection was measured on the three-item instrument used in the first study (Russell 2002; $\alpha = .81$) and an estimate of the prevalence of alcohol in the series was assessed with two items about how often alcohol was seen/heard in the series (anchored by 1- not at all and 5- very; $\alpha = .77$). The next set of questions focused on which character the respondents most closely associated with alcohol.

The survey concluded with a series of questions assessing the respondents' general beliefs and norms regarding alcohol consumption. The alcohol expectancies measure (Grube et al. 1995) was administered by asking respondents to indicate how likely (from 1- very unlikely to 5- very likely) it is that each of eight positive ($\alpha = .89$) and eight negative consequences ($\alpha = .79$) would happen to them personally if they were to drink three or four whole drinks of alcohol. Then, using a five-point scale adapted from research on attitude toward smokers (Pechmann and Knight 2002), they indicated their attitude toward drinkers (“In general, I think people who drink are”: good / bad, smart / dumb, fun / boring, attractive / unattractive, cool / uncool, appealing / unappealing; $\alpha = .92$). Next, the respondents' own alcohol consumption was measured by asking them to report how often, in the past 30 days, they had one or more whole drinks, on how many days they felt drunk, and on how many days they had five or more whole drinks in a row (the definition of binge drinking). These measures are all common indicators used in alcohol research. Lastly, demographic data were gathered.

Descriptive Analyses

Overall, there were no significant differences in attitude, involvement or connectedness at the two data collection sites (all t s (205) < 1.97, $p > .05$). The respondents varied in the

amount of exposure to the program, including 13.5% who had seen less than 25% of all episodes and 14.5% who had seen all of them. The respondents displayed a highly positive attitude toward the program ($M = 5.41$) and experienced high involvement with the program ($M = 4.94$). Connectedness levels spanned the entire scale ($M = 2.84$), thus providing adequate variance to test the proposed relationships.

Reception of the Alcohol Messages in the Program

Alcohol Recall—Recalled alcohol events were coded based on whether they were positive (e.g. Seth's parents drinking to loosen themselves up before sex), negative (e.g. drunk Seth throwing up everywhere and rolling over the hood of his parents' car) or neutral (e.g. Seth's dad meeting prospective clients in a bar). Viewers listed an average of 5.2 instances of alcohol, most of which (3.2) were negative. To assess what factor was most significant in predicting alcohol recall, a hierarchical regression was conducted of recall on overall exposure to the program (% of episodes viewed) in a first step, and attitude toward the program, involvement, and connectedness were then added. As can be seen in Table 2, only exposure and involvement were positively related to overall recall and only exposure was a significant predictor of the recall of negative alcohol events, as predicted by H1. As for the recall of positive alcohol events, none of the variables were significant but it should be noted that very few participants (4.4%) listed any positive alcohol events, as predicted by H3.

Estimates of Alcohol Prevalence—The same analysis conducted for general estimates of the prevalence of alcohol in the series also shows that only exposure is a significant predictor. Thus we find that, overall, increased exposure to the program leads to increased estimates of prevalence and recall of negative alcohol instances, regardless of viewers' levels of connectedness. These findings are consistent with the salience of the negative alcohol messages in *The O.C.* and with previous research showing that the amount of exposure to a program affects general estimates of the prevalence of alcohol in that program (O'Guinn and Shrum 1997).

Perceptions of Alcohol in The O.C.—Overall, viewers perceive the message about alcohol in the program to be associated with both negative and positive outcomes (means = 3.54 and 3.57 respectively) and negative and positive perceptions are not correlated ($r = .02$, $p > .05$). To assess what factor is most related to perceptions of alcohol in *The O.C.*, positive and negative perceptions were regressed on overall exposure to the program in a first step and then attitude toward the program, involvement, connectedness in a second step. As shown in Table 2, only overall exposure is related to the negative perceptions, in support of H2 and echoing the earlier finding that exposure is related to the number of negative alcohol events recalled.

However, a different pattern emerges for positive perceptions. As predicted by H4, connectedness is positively associated with positive perceptions. The more connected viewers are to the program, the more they perceive that alcohol in *The O.C.* is associated with positive outcomes such as feeling happy, having fun, or having an easier time expressing one's feelings.

Overall, these findings reveal different patterns of reception of the alcohol message in the program depending on the valence of the message. Whereas reception of the salient negative messages about alcohol increases with exposure to the program, reception of the subtle positive messages about alcohol increases with connectedness. The next set of analyses addresses how the reception of the messages relates to the viewers' own beliefs and attitudes about alcohol.

Yielding: Viewers' Own Alcohol Attitudes, Beliefs, and Behaviors

Attitudes Toward Drinkers—Ordinary least squares hierarchical regression analyses were conducted to test the hypotheses related to attitudes toward drinkers. The predictor variables included positive and negative perceptions of alcohol depictions in the program and their interactions with connectedness. Attitude toward the program, involvement, and exposure were also included. Interaction terms were calculated by taking the products of the relevant scales. On the first step, a simple additive model (model 1) was tested by entering only the main effects. On the second step, the interactive model was tested by adding the two-way interactions (model 2). Scores on all predictors were centered about their respective means, as is recommended when multiplicative terms are included in a regression analysis (Aiken and West 1991; Marsden 1981). The statistical significance of the increase in explained variance resulting from the addition of the interactions was considered in order to compare the models.

The pattern of results in Table 3 shows the expected interactive effects of connectedness and perceptions of alcohol in the program on attitudes toward drinkers. In model 1, the main effect of negative perceptions of alcohol in *The O.C.* is significant and in the expected direction, supporting H5. In model 2, which explains more variance than model 1 ($\Delta R^2 = .073, p < .05$), the interaction between connectedness and viewers' positive alcohol perceptions is significant and positive, as predicted by H6. Thus, the effects are as expected: whereas negative perceptions of alcohol in the program are related to all viewers' attitudes toward drinkers (H5), positive perceptions of alcohol in the program are only related to highly connected viewers' attitudes toward drinkers (H6). Therefore, connectedness moderates the relationship between positive perceptions of alcohol in *The O.C.* and attitudes toward drinkers.

Alcohol Beliefs—To test the relationship between perceptions of alcohol in *The O.C.* and real life alcohol beliefs, positive and negative alcohol expectancies were regressed on perceptions of the alcohol message in the program in a first step and then on overall exposure to the program, attitude toward the program, involvement, and connectedness. As shown in Table 4, viewers' negative perceptions of alcohol in *The O.C.* and connectedness are both related to viewers' negative alcohol expectancies. The more viewers perceive that *The O.C.* communicates negative drinking outcomes, the more they believe that alcohol is related to such negative consequences in real life, as predicted by H7. In addition, the more connected viewers are, the greater their negative alcohol expectancies, although the addition of connectedness does not increase the amount of variance explained. It should be noted that, whereas the amount of exposure to the program was related to the reception of the negative alcohol message communicated in *The O.C.*, it is not related to real life alcohol beliefs.

The results for the positive alcohol expectancies show a significant relationship with viewers' positive perceptions of alcohol in *The O.C.*. The inclusion of connectedness in the model also increases the variance explained ($\Delta R^2 = .098, p < .05$). The more connected viewers are, the more they believe that alcohol is linked to positive consequences in real life. H8, which predicted that connectedness would moderate the relationship between positive perceptions and expectancies is therefore not supported; instead connectedness is found to have a direct effect on positive expectancies. Overall, highly connected viewers are both more receptive to and in greater agreement with the underlying positive alcohol message communicated in *The O.C.*

Viewers' Drinking Behaviors—Respondents who had at least one drink the past month (91.3% of the sample) reported having had at least a drink 7.4 days over the past 30 days,

having felt drunk 4.1 days and having had five or more drinks in a row 3.3 days. A composite measure of alcohol drinking behavior was calculated by converting the drinking consumption items into monthly rates and averaging them ($\alpha = .85$). This measure was then regressed on attitudes and beliefs about drinking, including gender as a control. The model explains 26% of the variance in behavior, a finding similar to previous research on alcohol expectancies (Grube et al. 1995), and all the variables are significant ($p < .05$): alcohol consumption is positively related to positive alcohol expectancies (Std. $\beta = .17$), negatively related to negative alcohol expectancies (Std. $\beta = -.14$), and positively related to attitudes toward drinkers (Std. $\beta = .35$).

General Discussion

Overview of Key Findings

Cross-sectional data collected from a sample of young viewers of a TV series provide evidence that positive and negative alcohol messages in the program are received differently and are differently related to viewers' drinking attitudes and beliefs. The subtle positive messages are processed differently and follow different routes of recall and persuasion than the salient negative ones. The negative alcohol messages are more readily recalled and the reception of those messages, as evidenced by recall, estimates of prevalence and perceptions, is a function of the amount of exposure to the series, in line with the cultivation paradigm. These messages in turn are also positively related to viewers' beliefs about the negative consequences of alcohol in real life, although the model explains only a small percentage of the variance in negative expectancies.

The findings also extend previous research on the significance of audience connectedness as a predictor of television influence. Evidence is found that the subtle pro-alcohol messages that are not explicitly recalled are primarily related to highly connected viewers' alcohol beliefs and attitudes. The more connected viewers are, the more they associate alcohol with positive outcomes, not only within the program, but in real life as well. The study highlights the role of audience connectedness in affecting viewers' receptiveness to messages contained within a program, above and beyond overall exposure to the program. The audience survey data show that the amount of exposure to a program is related to viewers' general estimates of the prevalence of alcohol in the program but not their perceptions of the meaning related to alcohol or their beliefs about alcohol in real life. Connectedness, however, is related to such perceptions and thus reflects greater receptiveness to the latent positive message communicated about alcohol.

Limitations

The O.C. is emblematic of Hollywood's so-called teen drama series which target teenagers with appealing but often unrealistic images of high school life. While *The O.C.* provides a highly relevant and appropriate setting for this research, the focus on a single series is a potential limitation. However, the nature of alcohol messages in the program is similar to other prime-time series and the same processes likely apply. An additional limitation is that the results are bounded by the cross-sectional nature of the data presented in study two. As a result, it is not possible to address the directionality of the relationships between connectedness, perceptions of alcohol in the series and real life alcohol attitudes and beliefs. There are also potential limitations due to the self-reported nature of the data; however, the fact that anonymity was guaranteed helps mitigate these concerns.

Despite these limitations, the focus on an actual series and actual viewers of the series enhanced external validity and provided a real life venue for testing the impact of long-term exposure to the program and three years worth of connectedness development. As such, the

findings complement experimental research where the viewing conditions or messages in the program are manipulated and their impact on viewers assessed causally (Pechmann and Wang 2008).

Implications

The content analysis findings that alcohol messages continue to be omnipresent within a youth-targeted program have important public policy implications. Research has shown that the earlier in life that alcohol consumption begins the more likely an individual is to experience future chronic problems with both alcohol and illicit drug abuse, as well as medical problems associated with their usage (Grant and Dawson 1998). The Surgeon General believes that, because of their immense influence over media productions, entertainment and alcohol companies have a moral responsibility to limit not only alcohol advertisements but also alcohol depictions to younger audiences. To this end, the Surgeon General recommends that TV programs avoid excessive alcohol portrayals, not glamorize underage drinking in any respect, convey more balanced and realistic depictions of excessive alcohol consumption and most importantly... take research of this nature into consideration when developing media and advertising products (USDHHS 2007).

Limiting exposure to positive portrayals of alcohol is an important component of prevention campaigns and, although efforts have been made to reduce TV alcohol advertisements, little has been done to abate alcohol depictions contained in TV programming (Jernigan, Ostroff, and Ross 2005). Another strategy proposed by public health advocates is to display content warning messages to prompt viewers about the presence of alcohol messages in TV programs (Commercial Alert 2008). However recent research has shown that highly connected viewers are not only resistant to warnings about pro-alcohol messages in a TV episode but that they even become more positive toward alcohol (Russell and Russell 2008). This demonstrates the need for further research on the moderating role of connectedness on the effectiveness of different types of advertising and prevention messages.

The research presented here contributes to the growing evidence that messages contained within TV programming may influence consumers' health-related attitudes, beliefs, and behaviors, especially among younger viewers. TV programs may be important agents of socialization (O'Guinn and Shrum 1997) and young people consume a great deal of them. The findings of how embedded alcohol messages are processed by audiences have implications beyond this context, and future research could incorporate them to study the processing of messages about other health issues depicted on TV, such as nutrition or smoking.

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Appendix 1

Alcohol Expectancies

Negative	Positive
Do something you would regret	Feel good
Harm your health	Have fun

Negative	Positive
Embarrass yourself	Feel more confident or sure of yourself
Feel sad	Feel happy
Feel sick to your stomach	Feel more friendly or outgoing
Get in trouble with the police	Have an easier time talking to people
Feel out of control	Have an easier time expressing your feelings
Get a hangover	Feel relaxed

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TABLE 1
Overview of Alcohol Portrayals in *The O.C.*

		Overall (3 Seasons)	Average Per Episode
Type Of Visual	Overall Visual	05:04:51	04:01
	Foreground	03:21:54	02:39
	Background Incidentals	03:27:37	02:44
Audio Mentions	Total	359	4.72
	Negative	124	1.63
	Positive	59	0.78
	Neutral	176	2.32
Alcohol Type	Beer	00:31:49	00:25
	Wine / Champagne	01:32:43	01:13
	Cocktails	00:10:59	00:09
	Liquor	00:27:57	00:22
Setting	Home Ryan	01:30:44	01:12
	Home Marissa	00:15:37	00:12
	Home Other	00:26:17	00:21
	Party / Social Event	00:56:55	00:35
	Bar	00:47:16	00:37
	Restaurant	00:48:11	00:38
	Work	00:04:24	00:03
	Other Scene	00:15:27	00:12
Underage Drinking	Depicting Underage Drinking	00:46:43	00:37
	Underage Drinking At Parties	00:13:26	00:11
	Underage Drinking At Bars	00:11:15	00:09
Type Of Usage	Actual Consumption	01:39:44	01:19
	Holding / Next To	02:25:53	01:55
	Non Drinking	00:58:03	00:46

TABLE 2
Hierarchical Regression Results

DV: Total Recall of Alcohol Events				
Independent Variables	Step 1		Step 2	
	Std. β	t value	Std. β	t value
Exposure	.45	7.23*	.30	4.05*
Involvement			.35	2.47*
Connectedness			-.01	-.05
Attitude			-.10	-.80
R ²		.203		.252**
DV: Recall of Negative Alcohol Events				
Independent Variables	Step 1		Step 2	
	Std. β	t value	Std. β	t value
Exposure	.45	7.21*	.32	4.27*
Involvement			.19	1.35
Connectedness			-.01	-.07
Attitude			.04	.30
R ²		.202		.235**
DV: Alcohol Prevalence Estimates				
Independent Variables	Step 1		Step 2	
	Std. β	t value	Std. β	t value
Exposure	.24	3.58*	.17	1.99*
Involvement			-.10	-.64
Connectedness			.09	.93
Attitude			.17	1.27
R ²		.059		.077
DV: Negative Perceptions of Alcohol in Program				
Independent Variables	Step 1		Step 2	
	Std. β	t value	Std. β	t value
Exposure	.19	2.78*	.11	2.02*
Involvement			.13	.82
Connectedness			-.11	-1.12
Attitude			.12	.85
R ²		.036		.063
DV: Positive Perceptions of Alcohol in Program				
Independent Variables	Step 1		Step 2	
	Std. β	t value	Std. β	t value

DV: Total Recall of Alcohol Events				
Independent Variables	Step 1		Step 2	
	Std. β	t value	Std. β	t value
	Step 1		Step 2	
Exposure	-.04	-.54	-.22	-2.63*
Involvement			-.01	-.05
Connectedness			.31	3.20*
Attitude			.06	.41
R^2		.001		.086*

* significant, $p < .05$;

** significant change in R^2 from Step 1 to Step 2, $p < .05$.

TABLE 3
Multiple Regression Results for Attitude Toward Drinkers

Independent Variables	DV: Attitude toward Drinkers			
	Model 1 (main effects only)		Model 2 (full model)	
	Std. β	t value	Std. β	t value
Exposure	.08	1.01	.08	1.00
Involvement	.05	.32	.07	.45
Attitude	.09	.71	.12	.96
Positive Perceptions of Alcohol in TV Program	.01	-.08	.04	.49
Negative Perceptions of Alcohol in TV Program	-.25	-3.58*	-.22	-3.28*
Connectedness	.09	.94	.05	.58
Positive Perceptions X Connectedness			.26	3.87*
Negative Perceptions X Connectedness			.03	.48
R ²		.107		.180**

TABLE 4
Multiple Regression Results for Alcohol Expectancies

Independent Variables	DV: Negative Alcohol Expectancies			
	Step 1		Step 2	
	Std. β	t value	Std. β	t value
Negative Perceptions of Alcohol in TV Program	.15	2.18*	.19	2.70*
Exposure			-.12	-1.46
Involvement			-.03	-.18
Connectedness			.22	2.18*
Attitude			-.16	-1.14
R ²		.023		.063
Independent Variables	DV: Positive Alcohol Expectancies			
	Step 1		Step 2	
	Std. β	t value	Std. β	t value
Positive Perceptions of Alcohol in TV Program	.16	2.26*	.10	1.43
Exposure			.06	.71
Involvement			.15	.99
Connectedness			.20	2.03*
Attitude			-.06	-.45
R ²		.024		.122**