


AN ABSTRACT OF THE THESIS OF

Autumn L. Backhaus for the Master of Science  
in Psychology presented on April 15, 2004

Title: An Examination of the Relationship Between College Students' Conceptual Level Development and Their Perceptions of Advertisements Aimed at Alcohol Intervention

Abstract approved: 

The purpose of this study was to examine the relationship between college students' level of conceptual development and their preferences regarding types of advertisements aimed at alcohol behavior intervention. The participants were asked to consider two different advertisements, one based on social norms theory and a second, individual-based advertisement. Participants were 185 college students recruited from introductory and advanced level psychology courses at a midwestern university. The specific measures used for this study were the Paragraph Completion Test (PCT), which measures conceptual development levels. An Advertisement Questionnaire and Advertisement Comparison Questionnaire were constructed by the researcher to measure the participants' opinions about the two advertisements. Results failed to produce a significant relationship between conceptual development and advertisement preferences. However, the individual-based advertisement was rated as significantly more believable, appealing, and persuasive than the social norms based-advertisement. Results also indicated that participants had a significantly stronger identification with the individual-based advertisement than with the social-norms based advertisement. A significant relationship was also found between conceptual level development and the percentage of participants who reported not drinking. A larger percentage of non-drinkers scored at the

upper end of conceptual development, while a lower percentage of non-drinkers scored on the lower end of the conceptual development scale.

AN EXAMINATION OF THE RELATIONSHIP BETWEEN COLLEGE STUDENTS'  
CONCEPTUAL DEVELOPMENT AND THEIR PERCEPTIONS OF  
ADVERTISEMENTS AIMED AT ALCOHOL INTERVENTION

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A Thesis

Presented to

the Department of Psychology and Special Education

EMPORIA STATE UNIVERSITY

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In Partial Fulfillment  
of the Requirements for the  
Degree Master of Science

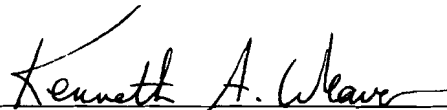
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by

Autumn L. Backhaus

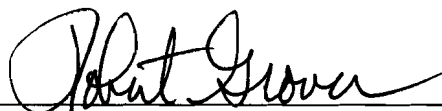
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Approved by the Department of Psychology  
and Special Education



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Approved by the Graduate Council

## ACKNOWLEDGEMENTS

My sincere thanks to Dr. Michael Leftwich, my thesis chair, for his guidance, assistance, and patience as well as his genuine interest in my thesis project and my personal success. I would also like to thank the committee members, Dr. Cooper Holmes and Dr. Cathy Grover, for their suggestions and advice. Thank you to Dr. McNeil for offering his expertise and dedicating his time for scoring the instruments. I would like to extend a special thank you to Kathy Tidwell. Her assistance and support in designing the advertisements was incredibly generous and her enthusiasm and continuous positive feedback were irreplaceable. I would also like to thank Amber Boyce for her help with data collection and data input, as well as Kim Comstock for her encouragement and technical support. Finally, my sincere thanks to my family for their continuous support of, and dedication to, my educational aspirations.

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## CHAPTER 1

### INTRODUCTION

The consumption of alcohol has been a significant concern on college campuses across the nation for quite some time. College student drinking is a prevalent phenomenon and heavy use can be the cause of significant problems for students, parents, administrators, professors, and community members. Potential negative effects associated with drinking (i.e. trouble with the law, injuries, poor academics, arguments, fights, property damage, unwanted sexual experiences, etc.) are a concern for everyone involved for decades. Numerous surveys about students' drinking and other behaviors have led to different interpretations of the nature and scope of problem drinking and intervention techniques.

A social norms based approach is one type of intervention being used on college campuses. The social norms based intervention is based on the students' own drinking patterns in relation to their perceptions of their peers' drinking patterns. A prime example of a social norms based intervention exists at Emporia State University (ESU). The advertisements posted throughout campus display messages such as "Most ESU students drink 1-5 drinks when they party" are direct results of the social norm research. This type of intervention is being tested and implemented all over the nation; however its effectiveness is mixed.

The fact that the current interventions are producing equivocal results and are potentially not as effective as originally planned is a concern for a variety of reasons. First, the negative aspects of college student drinking may still be occurring. Unsuccessful interventions lower the safety of the individual as well as the community.

On the other hand, college student drinking and the harmful behaviors sometimes associated with this behavior may not be as great a problem as it is perceived to be. It is possible the college student drinking that is occurring is for the most part not producing enough harmful consequences for an intervention to be necessary or effective.

Regardless of the reason for the possible ineffectiveness, researchers and administrators must make efficient use of limited resources. Funds would be best spent on evaluating the need for interventions, developing new interventions and improving existing efforts.

As a result of the concern regarding student drinking and the mixed results regarding the social norms intervention, some researchers have requested that other factors be taken into account (i.e., individual psychological factors) along with the social norms interventions. Individual psychological differences may play a competing role in the way college students receive interventions aimed at their drinking behavior.

Conceptual level of development is one way to examine psychological and developmental differences in individuals. Conceptual development is specifically concerned with how a person develops interpersonally.

Because of the continued concern for college student drinking, the potential for negative effects, and behaviors that can result from heavy drinking, further research is important. Due to the mixed results of the social norms based interventions, this study attempted to examine the possible relationship between individuals' conceptual level of development and the way they interpret and respond to the social norms based intervention campaigns.



## Review of the Literature

### *Social Norms*

Social norms have been a consideration for psychologists since Sherif (1936) first described the phenomena. Sherif defined social norms as the rules, guidelines, and traditions that are accepted by a group and are followed by all members. The group develops a set of standards, which are based on the members' shared experiences. These standards then become established guidelines by which the members live. Individuals are guided by social norms whether or not they are interacting with the group or alone. Individuals use social norms to guide their actions, thoughts and decisions in every day life.

Social norms theory has since been examined in reference to drinking behaviors. Heath (1977, 1995) studied alcohol use in cultures throughout the world and concluded that alcohol use should be studied in sociocultural contexts. According to Heath, the established norms of each subgroup are important considerations when trying to understand the patterns of individuals. That is, the established norms of each individual group need to be examined in order to fully understand the use of alcohol within that group. Therefore, Heath concluded that for prevention programs to function at the most effective level, the intervention messages must be tailored to the language of the targeted culture.

Perkins and Berkowitz (1986) furthered the ideas of Heath (1977, 1995) by studying college student populations. Specifically, they examined the differences between college students' actual drinking practices, as related to their perceptions and attitudes, as compared to what the students believed them to be. The study included both

reported drinkers and nondrinkers with a reported drinking index range of 0 to 28 (the index considered number days a person drank, and number of drinks, per episode in the past two weeks, as well as reported usual drinking patterns). They found that the norm perceived by the individuals on campus was not necessarily accurate when compared to the actual reported drinking practices. In actuality students reported, “moderate attitudes regarding drinking and that they disapprove of frequent, excessive drinking” (Perkins & Berkowitz, 1986, p. 970). However, the study also stated that “much of the potential value of these moderate norms may be lost because students tend to misperceive their normative environments” (Perkins & Berkowitz, 1986, p. 970). College students may be overestimating the amount of alcohol consumption by their peers due to their misperceptions of the normative behavior. Based on these findings, Perkins and Berkowitz hypothesized that it might be effective to introduce the true norms to the students who misperceive the drinking norm as higher. By educating these students about the true norms, as opposed to the misperceived norms, they may then modify their behaviors to more closely resemble the more accurate and moderate normative drinking behavior. As a result there would be a reduction in alcohol consumption and the negative consequences associated with it.

Several studies looked at different populations of college students. This included the study of only men (Steffian, 1999), Greeks (Larimer, Irvine, Kilmer & Marlatt, 1997), freshman (Gomberg, Schneider & DeJong, 2001), undergraduates (Clapp & McDonnell, 2000), and a national sample of close to 5,000 college students across the nation (Reis, & Riley, 2000). All studies examined the role of social norms on the samples’ perceptions of its peers’ drinking behaviors. The research often times indicated college students do

misperceive the drinking practices of their peers. Specifically some of the research (Clapp & McDonnell, 2000; Perkins & Wechsler 1996; Wild, 2002) determined that college students who misperceived their peers drinking were likely to consume more themselves. Gomberg, Schneider and DeJong (2001), Reis and Riley (2000), and Steffian (1999) further reported the use of social norms based interventions significantly reduced the amount college students perceived their peers as drinking, and also predicted that as a result of changing these perceptions, students would also change their own drinking behaviors.

Based on the research supporting the idea that college students' drinking is impacted by the perceived norms of their peers, Haines and Spear (1996) developed a social norms marketing campaign at Northern Illinois University. They conducted a cross-sectional research study that involved surveying students about their drinking behaviors and their perceptions of their peers drinking behaviors. Haines and Spear (1996) found that administering a social norms based media intervention had an effect on how college students perceived others and on their self-reported binge drinking. The intervention involved displaying actual drinking norm information, in the form of posters, newspaper ads, fliers, and pamphlets. The results of the research show that there was a decrease in the number of students who believed that drinking six or more drinks while partying was the normal practice of their peers. The program has since been successfully replicated by others (Haines, 1996, 1997; Jeffrey, 2000; Johannessen et al., 2000).

While some research supports the social norms marketing campaign, other research is less favorable for the program. Several different studies found that the social norms intervention was not successful when applied to Greek (Fraternity/Sorority)

populations (Glider, Johannessen, & Collins, 1998 as cited in Carter, 1998; Carter & Kahnweiler, 2000; Far, 2000). Another study focusing on residential college students found no difference between the social norm intervention group and the control group at time of posttest (Werch et al., 2000).

Although Steffian (1999) reported that normative education was associated with changes in perception of peers' drinking behaviors, he did not find a difference in the reduction of drinking behavior between the social norms educated group and the traditional educated group. Both of the groups, regardless of the type of education intervention they received, demonstrated a trend in decreased drinking. Specifically, "there was no evidence to suggest that correction of normative misperceptions performed any better than traditional educational efforts in reducing students' weekly use of alcohol" (Steffian, 1999, pp.131-132).

Dejong (2002) acknowledges that social norms interventions may be effective but requests further, more extensive, research in order to determine the true merits of the program. Other studies have acknowledged the possible impact that social norms have on college student drinking behaviors, but they also highlight the importance of examining interpersonal processes (Borsari & Carey, 2001) and developmental factors (Kuther, 1998).

Due to the mixed research on the social norms marketing intervention, additional research is needed. It is logical to look at some of the reasons for why the social norm program is not working in all cases. Kuther (1998) hypothesized that the consideration of development across the lifespan may provide some answers concerning early adulthood alcohol consumption. In congruence with this idea, examining individual psychological

differences related to development is important. These individual differences may be playing a role in the way that college students, at various developmental levels, receive interventions aimed at their drinking habits. Specifically, it could prove important to examine individual levels of conceptual development relative to individual perceptions and or reactions to the advertisements (Harvey, Hunt, & Schroder, 1961).

*Harvey, Hunt, and Schroders' (1961) Conceptual Development Theory*

Harvey et al. (1961) developed a theory describing individual progression through stages of conceptual development (interpersonal development). The theory is similar to Perry's (1970) intellectual and ethical theory in which individuals move from concrete ways of looking at the world to more abstract ways.

Harvey et al. (1961) looks specifically at how individuals progress in their interpersonal relationships. The theory is based on the idea of conceptual systems. A conceptual system is defined as "a schema that provides the basis by which the individual relates to the environmental events he experiences" (Harvey et al., pp.244-245). The conceptual system is basically a "schema" by which individuals filter all information concerning relationships with others. It provides the means for individuals to evaluate, organize, and respond to incoming information. Individuals' thoughts are organized into conceptual systems, which then serve as a link between the incoming stimuli and the output, or response, to those stimuli. Each individual's conceptual system is different from that of other people as a result of different concepts one has developed through learning and experience. Because of differences in the levels of conceptual functioning among individuals, the theory describes how conceptual systems function on a continuum from very concrete to more abstract ways of processing interpersonal interactions.

In its briefest form, the theory describes a series of seven stages. Individuals at the lower end of the scale operate with very concrete conceptual structures or ways for looking at interpersonal relationships. Individuals at the upper end of the scale operate with more diverse, and open ways of looking at interpersonal relationships. For the purpose of this research, Stages 1 through 4 are the most relevant. Stages beyond 4 are not likely to apply to the population within this research (college students). Individuals at Stage 1 tend to be concerned with fitting in. They have a desire for acceptance and do not see themselves as being different from others. Within this stage individuals would not want to stand out from others. They would tend to be conformists and feel most comfortable when clear rules are laid out for them by authority figures. They are very concerned with rules and categorical thinking and depend heavily on others for guidance and direction when uncertain. For example, students functioning at this stage display distinct characteristics within a classroom setting. Santmire (1985), for example, found that students at Stage 1 are very concerned with their teacher's authority. These students obey their teachers and follow the rules of the classroom. They prefer being told what to do because they are uncomfortable with selecting their own activity. Similarly these students evaluate the behavior of their classmates in terms of whether or not they follow the rules. Students at this stage find fault with others who do not conform. Students want to be accepted and liked by their fellow students, as well as the teacher.

In Stage 2, individuals begin to see themselves as different from others. They begin to learn about themselves and develop ideas of their own. While others' thoughts and opinions remain important, they are still concerned with rules and willing to follow them. At this stage, however, individuals are beginning to have their own ideas and

starting to have the desire to take control of their lives. Santmire (1985) believed that students functioning at Stage 2 would be very different in the classroom than students functioning at Stage 1. Stage 2 students want to have their own way of doing things, and therefore begin to challenge directions from teachers. Students at this stage are known to respond to teachers with a “make me” attitude. Stage 2 students may find themselves in constant power struggles with teachers because they resent the “Do it because I said so” response from teachers. The students’ main concern centers on the teachers’ request being reasonable.

Stage 3 consists of individuals beginning to move away from the ideas and insistence of authority figures. These individuals understand the need for rules, but choose to “do their own thing” instead. In this stage individuals begin to test limits with authority figures and resist dependence on others. They begin to see themselves as different and separate from others. Individuality really begins to take shape. According to Santmire (1985), students in this stage obey their teachers when the teachers’ view agrees with them or when the students realize that they do not have enough knowledge of the situation to make their own decisions. When students do disagree with the teacher, they would be able to construct a rational argument.

In Stage 4, individuals continue to see themselves as distinctly different from others, but they also start to see people differently. They begin to realize the differences that characterize others. Santmire (1985) reports that students at this stage enjoy classroom discussion and essay questions. Individuals at this stage acknowledge that each person in class is different, and they do not believe that only their answers are

correct. These students are willing to listen and think about the ideas of others even though they may not agree.

People who function at Stages 5 through 6 continue to develop an even more encompassing way of looking at their relationships with others. They begin to see that everyone is different and complicated. They become more empathetic, recognizing that each person has a unique background. Individuals at Stage 7 have a very individual complex moral philosophy and are concerned with how people can function with shared goals.

Although Harvey et al. (1961) considered it an advancement to move toward increasingly abstract stages of functioning, they did not mean that decision-making was necessarily easier. In fact life may actually become more complicated because individuals use more abstract ways of looking at the world and their relationships with others. Higher functioning people use even more complex ways of thinking which provides them with multiple options and answers to every question.

#### *Implications of Conceptual Development Theory on the Social Norms Interventions*

It seems reasonable to hypothesize that students functioning at different levels of conceptual development would have differing reactions to social norm advertisements. For example, individuals functioning at Stage 1 may be more likely to accept the normative advertisements, as they are more concerned with fitting in and being accepted, while an individual at Stage 2 or 3 may attempt to rebel against what the advertisements suggest. Individuals at stage 3 or 4 may not be as impacted by the advertisements because they are not as concerned with what other people are doing and have a view that everyone can do things differently. There is a need to examine what differences, if any,



exist between the different stages of conceptual development and the perception of the social norms advertisements to tailor the social norms interventions to improve it for possible future use.

### *Summary of the Literature Review*

Social norms and the impact they have on the individual have interested psychologists for many years. The social norms theory was eventually connected to alcohol use by Heath (1977, 1995), who believed that intervention programs would be most effective when tailored to normative language and practices of the specific, targeted group. Later, it was applied specifically to college student populations in regards to interventions on campuses and the students' perceptions of their peers' drinking behaviors. It has been established that college students might misperceive how much their peers typically drink when they party. With this idea in mind a research movement developed that used social norms theory in an attempt to adjust the perceived norms more accurately and in effect lower the rates of drinking among the college student population. The results of the research have been mixed; some of the feedback has positively favored the social norm intervention while other research has not provided results in support for the intervention. There has been a call from researchers to consider other factors that might be affecting the way that students perceive the social norm campaigns.

As a result of the mixed reviews, examining individual psychological differences in conjunction with social/normative differences is important. More specifically, individual conceptual development may have an impact on how individuals perceive normative messages regarding their drinking behaviors. Harvey et al. (1961) describe a series of stages from concrete to more abstract ways of looking at relationships. It is

possible that individuals functioning at the beginning levels of the continuum react in very different ways to social norm advertisements than those who are at the middle or upper levels. With this in mind it seems important to examine which ways, if any, levels of conceptual development impact the effectiveness of the social norms intervention advertisements.

### Hypotheses

This study investigated the independent variables of level of conceptual development and type of advertisement. The dependent variables included self-reported drinking, reported perceptions of peers drinking, responses to each advertisement questionnaire, and responses to the advertisement comparison measure. The following hypotheses regarding these constructs were tested:

- 1a. Participants at lower levels of conceptual development will have the most favorable perceptions (as measured by the advertisement questionnaire and the advertisement comparison questionnaire) of the social-norms-based advertisements.
- 1b. Participants at the higher levels of conceptual development will have the most favorable perceptions of the individual-based advertisements.
- 1c. A significant interaction will exist between level of conceptual development and the type of advertisement.
2. Participants at different levels of conceptual development will report different perceptions of their peers' average number of drinks per episode as well as the perceived number of episodes per week (as measured by the participant questionnaire).

3. Participants at higher levels of conceptual development will report a lower level of drinks consumed per episode and a lower number of drinking episodes per week than participants at a lower level of conceptual development (as measured by the participant questionnaire).

## CHAPTER 2

### METHOD

#### *Participants*

Participants consisted of 185 college students ranging in age from 18 to 24, 59 were men, and 126 were women. The participants were recruited from Introductory Psychology and upper-level Psychology classes. All participants participated voluntarily and some received one research point for participation, if receiving the credit was relevant to their required course work. Of the total sample, 82.4% reported that they had consumed alcohol before.

#### *Experimental Design*

A quasi-experimental mixed research design was used for this study. This design was chosen due to the subject variable and manipulated condition. The between-subjects independent variable consisted of the four levels of conceptual development while the within-subjects independent variable involved the two different advertisements.

#### *Instruments and Materials*

*Participant Questionnaire (Appendix A).* A participant questionnaire was developed in order to survey the participants' perceptions of their individual drinking and that of their peers drinking. The tool was also used to determine if the participants fell within the age range of 18 to 25 and were current university students. Although gender was not a variable in this study, a question concerning gender was included to allow the researcher to determine if a representative sample of men and women were included in the survey. Similarly, questions concerning student athlete status and Greek membership

were included. These two questions were not considered primary variables of interest; however, they were included to allow for exploratory analysis.

*Paragraph Completion Test (Appendix B).* The PCT (Hunt, Butler, Noy, & Rosse, 1978) is a projective measure, similar to incomplete sentence blank (Rotter, 1999) consisting of seven sentence stems. Since there are no right or wrong answers, respondents are free to openly discuss how they feel about each of the stems. In general, the sentence stems are designed to examine individuals' relationships to authority, disagreement with others, ambiguity, and how they wish they and others were different.

Scores for each sentence stem range from 0 to 7. Briefly, scores are assigned on the basis of the number of dimensions used by the respondent to answer the question. Lower scores are assigned to those responses that are more concrete in the sense that they analyze the question from only one or two dimensions. Higher scores are assigned as respondents increase the complexity of their responses. Scores for each sentence stem are averaged to yield an overall score of conceptual level. The overall score is then considered in terms of where it fits in regards to the Stages. For example, actual PCT scores ranging from 0 to 1.9 are considered Stage 1 of conceptual development and actual scores of 2 to 2.9 are considered Stage 2. The reliability of the PCT is between .80 and .95, as reported by Schroder, Driver and Steufert as cited in Gardiner and Schroder (1972). Validity of the PCT is reported to be very strong by Gardiner and Schroder (1972), "in over a hundred studies employing complexity as a major experimental variable, the test has consistently predicted behavioral performances congruent with theoretical expectations" (p. 960).

*Advertisement Questionnaire (Appendix C).* An advertisement questionnaire was developed specifically for use in this research. This questionnaire assessed the participant's views on the advertisements. Specifically, it subjectively measured how believable, appealing, and persuasive the participant believed the advertisement to be. It also measured the participants how well participants identified with the advertisement. Each item was measured by a 1 to 10 Likert type scale. Participants completed the questionnaire twice, one for each advertisement.

*Advertisement Comparison Questionnaire (Appendix D).* Another questionnaire was developed specifically for use in this research. This questionnaire assessed the participants' opinions concerning the comparison of the two different advertisements. It is a very brief measure with two statements that use a 1 to 10 Likert type rating scale, and one question which asked the participant to circle which advertisement they prefer the most.

### *Procedure*

Participants registered to participate by either signing up on the research board or by signing up on sheets passed out by the researcher during their classes. The participants signed up for a specific date, time, and location to participate in the research. When the participants arrived at their scheduled session, the researcher read a script of information and instructions regarding the research. The researcher also read aloud the informed consent document (Appendix E). The participants were then asked to read and sign the informed consent document. The researcher then handed out the Paragraph Completion Test (PCT) and asked the participants to complete it. After completing the PCT the participants were asked to complete the participant questionnaire. Next the

participants were asked to look at the first of the two different advertisement posters (Appendix F). The order in which the two advertisements were shown was counterbalanced. After viewing the first advertisement the participants were asked to complete the advertisement questionnaire. Next the participants were asked to view the second advertisement and to fill out another advertisement questionnaire. Finally the participants were given the advertisement comparison questionnaire. Following completion of the final questionnaire, the researcher provided the participants with a brief debriefing, thanked them for their time and participation, and excused them from the room.

## CHAPTER 3

### RESULTS

#### *Statistical Design*

After the data were collected, a trained rater, who was blind to the conditions and purposes of the study, scored each of the PCTs. The data was then put into a SPSS database. The ratings from the advertisement questionnaires and the advertisement comparison questionnaire were also input into the database. A series of 2 x 4 mixed ANOVAs were utilized. The two independent variables in this study were level of conceptual development (between groups) and type of advertisement (within groups). There were several dependent variables considered within this study. The first consisted of self-reported drinking behaviors, more specifically number of drinks per episode and number of episodes per week. The second consisted of perceptions of peers drinking behaviors, more specifically, the perceived number of drinks per episode and perceived number of episodes per week. The third and fourth dependent variables, perception of each advertisement, specifically involved believability, overall appeal, persuasiveness, and identification with the advertisement. The fifth and final dependent variable consisted of the comparison of the two advertisements, specifically, overall content similarity, message similarity, and advertisement preference.

Paragraph Completion Test scores ranged from 0 - 2.9 with only five participants scoring above 2. Because the sample did not yield the proposed 1 to 4 range, it was divided into quartile splits based on the sample distribution. It was determined that this was necessary in order to remain consistent with the proposed 2 x 4 ANOVA design. The first quartile consisted of scores ranging from 0.1 to 1.0 ( $n = 53$ ), the second



consisted of scores ranging from 1.1 to 1.2 ( $n = 57$ ), the third, 1.3 to 1.6 ( $n = 37$ ) and the fourth quartile ranged from 1.7 to 2.9 ( $n = 31$ ). There were some missing data due to three participants leaving part of the measure blank and thus not having an overall PCT score.

A manipulation check on the similarity of the overall content and message of the social-norms-based advertisement and individual-based advertisement (as measured by the advertisement comparison questionnaire, Appendix D) was performed. There was no significant difference between conceptual development and the perceived overall content similarity of the advertisements  $F(3, 176) = 1.51, p > .05$  nor was there a significant difference between conceptual development and the perceived message similarity of the advertisements  $F(3, 176) = 1.57, p > .05$ . Therefore, all groups saw the two advertisements as more similar than different in both message and overall content.

Hypotheses 1a and 1b predicted that participants' conceptual development scores would interact with the type of advertisement. Specifically, participants at lower levels of conceptual development would have the most favorable perceptions of the social-norms-based advertisements. Hypothesis 1c predicted a significant interaction between type of advertisement and level of conceptual development. The ratings on the following dimensions were used as dependent variables: believability, overall appeal, persuasiveness, and identification with the advertisement (as measured by the Advertisement Questionnaire, Appendix C). Each dimension was measured on a Likert type rating scale from 1 (not believable, not appealing etc.) to 10 (very believable, very appealing).

For believability of the advertisements, the interaction between type of advertisement and conceptual development quartile was non-significant,  $F(3, 174) = .786, p > .05$ . The main effect of conceptual development category was also non-significant,  $F(3, 174) = .82, p > .05$ . The only effect that was significant was type of advertisement,  $F(1, 174) = 30.43, p < .001$ . The individual-based advertisement ( $M = 6.31, SD = 2.22$ ) was rated as significantly more believable than the social-norms-based advertisement ( $M = 5.14, SD = 2.50$ ).

For the dependent variable appeal of the advertisements, the interaction between type of advertisement and conceptual development quartile was non-significant,  $F(3, 176) = .601, p > .05$ . The main effect of conceptual development category was also non-significant,  $F(3, 176) = .511, p > .05$ . Again, the only significant effect was type of advertisement,  $F(1, 176) = 21.22, p < .001$ , with the individual-based advertisement ( $M = 5.88, SD = 2.40$ ) being rated significantly more appealing than the social-norms-based advertisement ( $M = 4.83, SD = 2.50$ ).

For persuasiveness of the advertisements, the interaction between type of advertisement and conceptual development quartile was again non-significant,  $F(3, 176) = .758, p > .05$ . The main effect of conceptual development category was also non-significant,  $F(3, 176) = .40, p > .05$ . Consistent with the previous analyses, the individual-based advertisement ( $M = 5.22, SD = 2.35$ ) was rated as significantly more persuasive than the social-norms-based advertisement ( $M = 4.53, SD = 2.43$ ) for type of advertisement,  $F(1, 176) = 9.03, p < .01$ .

For the final dependent variable, identification with the advertisements, the interaction between type of advertisement and conceptual development was non-

significant  $F(3, 176) = 1.79, p > .001$ . The main effect of conceptual development category was also non-significant,  $F(3, 176) = .84, p > .001$ . The only significant effect was once again type of advertisement,  $F(1, 176) = 23.51, p < .001$ , with participants reporting a stronger identification with the individual based advertisement ( $M = 6.13, SD = 2.81$ ) than the social-norms-based advertisement ( $M = 4.96, SD = 2.89$ ).

Hypothesis 1 was not confirmed. However, type of advertisement had a consistent effect on all participant ratings. The individual-based advertisement was rated consistently higher than the social-norms-based advertisement on all the dimensions of believability, appeal, persuasiveness, and identification. Interestingly, as stated above, there was no significant relationship found between conceptual development and perceived overall content and message of the two advertisements.

The second hypothesis predicted that participants at different levels of conceptual development would report different perceptions of their peers' average number of drinks per episode and average number episodes per week. A difference among the conceptual development quartile and number of drinks per episode  $F(3, 171) = .38 p > .05$  was not found. Similarly, there was also no significant difference between the conceptual development quartile and the number of episodes per week  $F(3, 171) = .06, p > .05$ . Overall, the sample reported that on average the participants believed their peers drank approximately 6 drinks ( $M = 6.07, SD = 3.16$ ) per episode and have an average of 3 episodes ( $M = 2.87, SD = 1.28$ ) per week.

The third hypothesis predicted that participants at higher levels of conceptual development would report a lower level of drinks consumed per episode and episodes per week than participants at lower levels of conceptual development. Approximately 82%

of participants reported consuming alcohol while 18% denied the use of alcohol. There were no significant differences found between quartiles of conceptual development and reported drinking patterns in either the number of drinks per episode  $F(3, 175) = .55, p > .05$  or number of episodes per week  $F(3, 175) = .91, p > .05$ . The participants who reported drinking said they drink approximately 5 drinks per episode ( $M = 4.98, SD = 4.02$ ) and have approximately 1 episode ( $M = 1.18, SD = .96$ ) per week. Thus, Hypothesis 3 was not confirmed.

Exploratory analysis was conducted on the relationship between conceptual development quartile and whether or not a participant reported drinking. A significant relationship was found between conceptual development quartile and the participants' self-reports of whether or not they drink,  $\chi^2(3, N = 182) = 12.70, p = .005$ . The participants who scored within the fourth quartile had a greater percentage of nondrinkers (37.5%) and a lower percentage of reported drinkers (62.5%) than the other three quartiles. In other words, the percentage of nondrinkers in the other three categories were 11.3%, 18.6% and 7.9% respectively, indicating that a significantly higher percentage of non drinkers fall within the fourth quartile. Similarly, for the reported drinkers, the percentage of participants in the first three quartiles were 88.7%, 81.4%, and 92.1%, indicating that the fourth quartile had the lowest percentage of reported drinkers at 62.5%.

Due to the lack of significant findings between conceptual development and three of the four dependent variables, further exploratory analysis was conducted based on group membership. Specifically, athletes, Greek membership, and non-membership group (participants not in either of the other two) were examined. There were three

participants who identified with both the athlete group and the Greek group. In order to have three separate groups, those three participants were excluded from the analysis. The same pattern was shown for each of three groups as had been shown for the entire sample, where type of advertisement was the only significant finding. For each group, type of advertisement had a significant effect on ratings of believability, appeal, persuasiveness, and identification. Type of group had no relationship with ratings on type of advertisement, and conceptual development quartiles had no interaction for any of the groups.

Participants in both the athlete group and Greek group reported higher numbers of average drinks per episode and number of episodes per week. Athletes reported consuming an average of six drinks per episode ( $M = 6.35, SD = 5.70$ ) and having an average of one episode per week ( $M = 1.31, SD = 1.11$ ). The Greek group reported consuming an average of 6 drinks per episode ( $M = 6.20, SD = 4.10$ ) with an average of 1.5 episodes per week ( $M = 1.45, SD = .83$ ). Finally, the non-membership group reported approximately 4 drinks per episode ( $M = 3.61, SD = 3.877$ ) and approximately 1 episode per week ( $M = .86, SD = .922$ ). Interestingly, all three groups estimated that their peers have approximately 3 episodes per week, however, the athlete and Greek groups estimated their peers consume approximately 7 drinks per episode while the non-membership group reported their peers consume approximately 6 drinks per episode. Overall, there were no significant differences found when considering group membership and conceptual development, however, a difference in drinking patterns was demonstrated.

Finally, overall advertisement preference was considered. No significant differences were found between conceptual development quartiles and the participants report of which advertisement they preferred most,  $\chi^2(3, N = 180) = 6.29, p > .1$ . However, regardless of conceptual development, approximately 58% of the participants preferred the individual-based advertisement while 41.7% preferred the social-norms-based advertisement.

## CHAPTER 4

### DISCUSSION

The purpose of this study was to examine the possible relationship between individual psychological differences and the way that college students perceive interventions aimed at their drinking habits. The study looked specifically at college students, at different levels of conceptual development, and whether or not their conceptual levels impacted the way they reacted to both the social norm-based advertisement and the individual-based advertisement. There were several dependent variables considered in this study. First, perceptions of both advertisements included believability, overall appeal, persuasiveness, and identification with the advertisement. A comparison of the two advertisements was also considered, specifically overall content similarity, message similarity, and advertisement preference. In addition to the variables concerned with the two advertisements, self reported drinking behaviors as well as perceptions of peers' drinking behaviors were also considered. Both the self reported drinking and perceptions of peer drinking looked specifically at number of drinks per episode and number of episodes per week.

#### *Research Hypotheses*

As stated in Chapter three the hypotheses in this study were not confirmed. It is possible that these findings could be in part attributed to the participant data not yielding the proposed range of conceptual development levels. It was anticipated that the scores would range from 1 to 4 within the college student data sample. However, after collecting and scoring the data, the sample only ranged from 0.1 to 2.9. Therefore the conceptual development scores were divided into quartile splits based on the sample

distribution. These quartile splits were then used in the data analysis concerned with conceptual development. The lack of adequate spread may account for why no interactions were found between conceptual development scores and type of advertisement. Because the range was limited from 0.1-2.9, as opposed to the broader range of 1-4, the higher end of the conceptual development scale was not represented in the sample. It is possible that individuals ranging from 0.1-2.9 are not psychologically that different from each other in terms of development, as opposed to individuals ranging from 1-4, who may have been more psychologically diverse. In other words there may not be enough of a psychological difference between a score of .1 and 2.9, whereas the psychological difference between a score of 1 and 4 may have been significant enough for the results to be different.

Another possibility, when considering the levels of conceptual development, would have been to use an alternative analysis strategy. It might have been interesting to narrow the levels of the independent variables from 4 to 2. Instead of using quartiles, splitting the PCT scores into upper and lower halves. The use of a 2 x 2 design instead of a 2 x 4 design might have resulted in different findings. In the future, the data will be reanalyzed utilizing these statistical methods.

The reasons for the sample not yielding the anticipated range of scores could be attributed to several different factors. First, a larger sample size may have been needed. Second, the data sample consisted of a larger number of freshman participants than any other class. The larger number of freshmen within the sample may have increased the number of lower conceptual development scores. Third, it is possible that the accessible population of college students from only one university simply does not show the same



spread in conceptual development scores as students might at another university or variety of other universities. For example, a larger university in a different geographical location may provide different findings in terms of conceptual development scores.

### *Strengths of the Research*

One of the major strengths of this research study involved the systematic manipulation of two different advertisements with similar message and overall content. The idea of comparing two advertisements on several different dimensions was conducted in an empirical, experimental manipulation, which has resulted in some interesting feedback from participants on the advertisement preferences.

Another strength of the research involves the evidence of some interesting findings related to advertisement preference. Advertisement preference between the individual-based and social-norms-based advertisements was overwhelmingly in favor of the individual-based advertisement, regardless of conceptual development and/or group membership. The results indicated that the individual-based advertisement was found to be significantly more believable, appealing, and persuasive, and participants identified with it more than the social-norms-based advertisement. Not only was the individual-based advertisement rated significantly higher on the above dimensions, it was also consistently found to be scored above 5 on the scale of 1-10 (1 being “not” believable, appealing etc. and 10 being “very” believable, appealing etc.). The social-norms-based advertisement consistently rated no higher than 5.1 on the scale of 1-10 indicating a rating closer to “not” believable etc. These findings were evident regardless of participants’ conceptual development scores as well as self-reported group membership as a Greek member, an athlete, or a non-membership group.

### *Implications of the Findings*

The implications of the overall preference for the individual-based advertisement are especially interesting considering that the two advertisements were specifically designed to be as similar as possible in overall content, and message. Special attention was also paid to the overall appearance of the advertisement in terms of the layout and image. The two advertisements were purposely designed to have a similar number of individuals in each image, similar overall look of the images, as well as the same number of statements. The statements were also written with the intention of providing the same information but with a different context. For example, the social-norms-based advertisement states “Most students drink moderately if at all (72%)” while the individual based advertisement states “You choose to drink moderately or not at all.” According to the data, the participants saw no significant difference between the two advertisements in both overall content and perceived message; in other words, they saw the two advertisements as similar in those areas. If the participants reported the two advertisements to be similar in both overall content and perceived message, then how does one explain the overwhelming preference for the individual-based advertisement? What is it about the individual-based advertisement that is more favorable and/or what is it about the social-norms-based advertisement that is less favorable? These are important questions for the field, as the social-norms-based advertising campaigns are very widely used across the nation. Previous research has indicated that the social-norms-based intervention campaigns have been well-received and made differences on the reported drinking behaviors of students. However, the current research indicates that students actually prefer an advertisement that is not social-norms-based. If students prefer an

individually based advertisement to that of the social-norms based advertisement, it may provide some explanation for some of the previous research that has resulted in a less favorable response to social-norms-based advertising.

The idea that students in this research sample reported a preference for the individual-based advertisement, and rated it in the upper 50th percentile on the rating scales; should be seriously considered when developing future research as well as developing and implementing future intervention campaigns. It would seem logical to look closely at students reported type of advertisement preferences when developing advertisements aimed at impacting their drinking behaviors. If students do not identify with an advertisement or find the advertisement to not be as believable, appealing, and persuasive as another advertisement, then why choose to use it? Instead of looking at which social-norms-based advertisement students prefer, why not ask them for their preference between an advertisement based on social norms theory and an advertisement that is not social norms related? The results of any campaign aimed at alcohol use intervention might be more successful if the advertisements were designed in a way that students reported identifying with as well as found more believable, appealing, and persuasive. In other words, using an advertisement that students selected as their preferred type of advertisement, regardless of whether or not it is based on social norms theory, might be more successful at impacting the drinking behaviors of that population.

#### *Directions for Future Research*

Although the results from the present study are limited in scope, the ideas behind the research as well as the results of advertisement preference are still promising. As a result of this research study, future research could develop in several different ways.

First, the psychological developmental levels of college students should still be considered as an important component when it comes to interventions aimed at alcohol use. Further studies might want to consider individual psychological developmental differences, however changes can be made to the current study that might result in different findings. This might be accomplished by using the Paragraph Completion Test to again measure development. However it is necessary to take into consideration implementing the above recommendations, such as larger target population, larger sample size, participants from more than one university and more upper classmen participants.

Studies examining the individual differences and their relationship to intervention efforts could also be implemented in other ways. A similar study could be implemented using a different instrument to measure psychological development. A different instrument may be able to measure a wider range of differences as well as consider different aspects of psychological development that would provide more information and possibly different results regarding psychological differences and advertisement preference.

Another avenue for future research could include a more in-depth examination of reported reasons for why participants prefer the individual-based advertisement as opposed to the social-norms-based one. Instruments could be created asking more comparative questions concerning the advertisements as well as open-ended questions that allow the participants to provide feedback on why they made the choices that they did. The information provided in such a study might prove to be very important in the development of future intervention campaigns regardless of whether or not they are social-norms-based or based on another theory.

Other areas that might be interesting for future research could include a more in-depth look at different group memberships and the many differences that may exist between them, such as differences in development levels, differences in reported drinking patterns, and advertisement preferences. Such differences might be important to identify and consider when developing different intervention campaigns.

As for developmental differences, this research found a non-significant, but linear trend in the data when conceptual development level was examined in relationship with group membership. The non-significant, linear trend was shown in the PCT scores of the four groups (Non-group, athletes, Greeks, both athlete and Greek). An insufficient cell size for the group that identified themselves as both athlete and Greek, prevented more meaningful analysis. Future research should pursue this avenue because the trend indicates differences between groups.

Along with developmental differences, reported drinking patterns might also be a subject to consider for each group independently. In this study participants who were identified themselves as being in the Greek or athletic groups self reported a similar number of episodes per week, however, the Greek and athletic groups reported a higher number of drinks per episode. Athletes reported the highest number of drinks per episode ( $M = 6.35, SD = 5.695$ ), followed by the Greeks ( $M = 6.20, SD = 4.096$ ), while students not identified as a member of either group reported the lowest number ( $M = 3.61, SD = 3.877$ ). A significant difference was shown in the number of reported drinks per episode between the participants who considered themselves a part of a group (either Greek or Athlete) and the students who reported not being a part of a group  $F(2, 166) = 5.63, p = .004$ . There was also a significant difference between the group and non group in the

number of reported episodes per week  $F(2, 166) = 4.5, p = .01$ . It might be very important to consider not only the possibility of developmental differences existing between different groups but also their self reported drinking patterns. These two issues might prove very important considerations when targeting a group of students.

Advertisement preference differences between student groups might also be an interesting avenue for further research. For example, research could look at the difference between Greek and non-Greek students' preference of social-norms-based advertisements as compared to individual-based advertisements. Another student group to consider might be student athletes and their type of advertisement preferences.

Comparisons between these three different groups, in terms of issues such as developmental levels, drinking patterns and advertisement preferences, may produce findings that could result in more tailored intervention campaigns created for specific groups. Specifically, this research could lead to different and unique, and therefore possibly more effective, intervention campaigns being implemented for each of the three groups.

Finally, considering the above information on the possible differences among student groups, future research might want to reexamine the concept of social norms groups and how exactly they are defined. In previous research the social norms group has often been defined as all college students at a specific institution. In other words, researchers have tried to impact drinking patterns and perceptions, based on informing students of what the majority of the entire student body is doing. It might be interesting to break down the idea of a social norm group into a smaller, more tight knit, group of peers (such as athletes or Greeks) as opposed to the entire university population. It seems

that most students identify themselves with smaller peer groups or “friends”. These groups may be based on social elements such as common interests, athletic teams, or Greek membership. They may also be based on situational type relationships, such as living environments (i.e., residence halls, apartments), major areas of study, extra curricular activities etc. Each one of these different peer groups may have very different practices when it comes to their “normal” drinking patterns such as drinks per episode and episodes per week. In addition each group might have very different perceptions of what their peers within the small group are doing in terms of drinking patterns, as well as their perceptions of what members of other groups are doing. Drinking patterns might not be the only differences between these smaller groups, developmental levels as well as advertisement preference may depend on which group is being surveyed. With this in mind, basing social norms interventions on smaller more intimate groups of students may be considered more in context with Heath’s (1977, 1995) original theory on tailoring alcohol interventions to the specific language and behaviors of the targeted group. Each of the smaller groups on a college campus exhibit differences in their communication styles, behaviors, standards and guidelines. According to Heath (1977, 1995), those elements need to be considered independently for each group when tailoring intervention methods aimed at their drinking behaviors. With this idea of smaller “social norm groups” being considered, students may be more apt to make changes in their own behavior based on what the peers they are closest to are doing as opposed to a large group of the “unknown” student body. If this is true, and the social norms based intervention was to be implemented, it might be more successful to tailor intervention advertisements

for specific peer groups. The interventions could be based on data collected from each individual peer group as opposed to the entire student body data.

### *Conclusions*

Despite the results of the current research not supporting the stated hypotheses, interesting data were still obtained. As a result of the data, some interesting conclusions were made about this samples' advertisement preferences. The information found in the data as well as conclusions that were made based on the study overall may be useful in future research. Continued research in this area is important, due to the negative consequences associated with alcohol consumption being a concern on most university campuses, and campuses looking for the best way to positively change those concerns.



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APPENDIX A

Participant Questionnaire

## Participant Questionnaire

Please answer the following questions honestly and to the best of your ability. Please read the questions carefully.

1. Gender
  - a. Male
  - b. Female
  
2. Classification
  - a. Freshman
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. Grad/professional
  
3. Age  
\_\_\_\_\_
  
4. Are you a student athlete? (circle one)
 

Yes                      No
  
5. Are you a member of a Greek organization on campus (circle one)
 

Yes                      No
  
6. Do you ever drink alcoholic beverages? (circle one)
 

Yes                      No
  
7. When you party how many drinks\* do you usually have?  
\_\_\_\_\_
  
8. How many nights a week do you usually drink (circle one)?
 

1      2      3      4      5      6      7
  
9. How many nights a week do you think most ESU students usually drink (circle one)?
 

1      2      3      4      5      6      7
  
10. How many drinks\* do you think most ESU students have when they drink?  
\_\_\_\_\_

**\*Note: One Drink = 12 oz. beer OR  
4-5 oz. Wine OR  
1-1.5 oz. Liquor**

APPENDIX B

Paragraph Completion Test

Please respond to the following sentence stems with a brief paragraph.

1. What I think of rules...

2. When I am criticized...

3. When someone disagrees with me...

4. When I am uncertain...

5. When I am told what to do...



6. How I wish I were different...

7. How I wish others were different...

APPENDIX C

Advertisement Questionnaire

## Advertisement Questionnaire

Please answer each of the following questions honestly and openly.

1. How believable is this advertisement?

1      2      3      4      5      6      7      8      9      10

Not believable

Very believable

2. How appealing is this advertisement?

1      2      3      4      5      6      7      8      9      10

Not appealing

Very appealing

3. How persuasive is this advertisement?

1      2      3      4      5      6      7      8      9      10

Not persuasive

Very persuasive

4. How strongly do you identify with this advertisement?

1      2      3      4      5      6      7      8      9      10

Not strong at all

Very strong

APPENDIX D

Advertisement Comparison Questionnaire

## Advertisement Comparison Questionnaire

1. The overall content of these two ads is...

1      2      3      4      5      6      7      8      9      10

Not similar

Very similar

2. The messages in these two ads are...

1      2      3      4      5      6      7      8      9      10

Not similar

Very similar

3. Circle the Advertisement that you prefer the most.

Advertisement with the Blue Dot

Advertisement with the Red Dot

APPENDIX E

Informed Consent Document

## INFORMED CONSENT DOCUMENT

The Department of Psychology and Special Education at Emporia State University supports the practice of protection for human subjects participating in research and related activities. The following information is provided so that you can decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time, and that if you do withdraw from the study, you will not be subjected to reprimand or any other form of reproach.

You are invited to participate in a study investigating the relationship between drinking behaviors and advertisements. You will be asked to complete two questionnaires. You will also be asked to look at different advertisements and provide feedback. The length of time required to participate is approximately 15-20 minutes.

There are no known discomforts or risks associated with participation in this study. There are no direct benefits for the participants in the study. In general, the benefits of this study involve the acquisition of more in-depth information concerning college student drinking behaviors and potential improvements of interventions aimed at those behaviors.

Information obtained in this study will be identified only by code number. Your name will be used only to indicate that you participated in the study and received research credit for participating.

If you have any questions or comments about this study, feel free to ask the experimenter. If you have additional questions, please contact Dr. Leftwich, in the Department of Psychology and Special Education 341-5317.

“I have read the above statement and have been fully advised of the procedures to be used in this project. I have been given sufficient opportunity to ask any questions I had concerning the procedures and possible risks involved. I understand the potential risks involved and I assume them voluntarily. I likewise understand that I can withdraw from the study at any time without being subjected to reproach.”

---

(Signature of participant)

---

(Date)

APPENDIX F

Advertisement Posters





## Healthy Person Healthy Drinking

You choose to drink moderately or not at all

You choose to have a driver who has not been drinking

You choose to drink with people you know and trust



## Healthy Friends Healthy Drinking

Most students drink moderately if at all (72%)

Most of those who drink ride with drivers who  
have not been drinking (81%)

Most drink with people they know and trust (86%)

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5/17/04

Date

An Examination of the Relationship  
Between College Student Conceptual Level  
Development and Their Perceptions of  
Advertisements Aimed at Alcohol  
Intervention

Title of Thesis



Signature of Graduate Office Staff

5-18-04

Date Received

