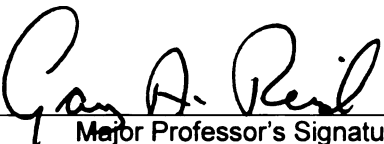This is to certify that the
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THE EFFECT OF HUMOR ON MEMORY AND REACTANCE
IN PUBLIC SERVICE ANNOUNCEMENTS

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EDWARD LAWRENCE GLAZER

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THE EFFECT OF HUMOR ON MEMORY AND REACTANCE IN PUBLIC
SERVICE ANNOUNCEMENTS

By

Edward Lawrence Glazer

A THESIS

Submitted to
Michigan State university
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Telecommunication, Information Studies, and Media

2004

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ABSTRACT

THE EFFECT OF HUMOR ON MEMORY AND REACTANCE IN PUBLIC
SERVICE ANNOUNCEMENTS

By

Edward Lawrence Glazer

While experts recommend against the use of humor in PSAs, other research from advertising, education, and persuasion has found that using humor in messages increases attention and recall, but reduces perceptions of threat which is a precursor of reactance. Two PSAs were produced for this study from a Social Norms perspective that concerned alcohol consumption. Both the more and less humorous version of the PSA generated high recognition memory (88%) and relatively low false alarms to message relevant statements (13%). A negative correlation between perception of humor and reactance was also observed. The importance of these findings for health persuasion is discussed.

This work is dedicated to my family and friends, without whom I would never have

gotten to where I am.

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Introduction

There is a thin line between our media and our culture. As a group of co-workers stand around the office water cooler discussing last night's episode of "Survivor", they are simultaneously reacting to *and* producing culture. Viewed this way, mass media does not engage in "the act of imparting information or influence, but the creation, representation, and celebration of shared even if illusory beliefs." (Carey, 43, 1992). Observers might point to the increase of women's haircuts resembling those of Rachel on "Friends" as an example of culture being both created and celebrated by popular media. Those same cultural observers might find it difficult to determine the exact mechanisms by which the "Rachel cut" becomes a representative piece of popular culture.

In "The Tipping Point", Malcolm Gladwell describes the social phenomena of localized trends spreading with viral growth. Gladwell uses the example of countercultural youth in East SoHo adopting a dying shoe brand, the Hush Puppies, as it blooms into a global fashion phenomenon. He describes this process as a social epidemic similar to the virulent Internet buzz that helped create successful Hollywood films out of independent works such as "The Blair Witch Project" (Corliss, 1999). Ignoring the specifics of how media goes about the creation of culture, we can agree that there are examples of media channels resulting in the production of popular icons.

The examples of Hush Puppies and "Blair Witch Project" are representative of popular culture for marketable products, but this same process can be utilized to market values and behaviors. In this way Public Service Announcements (PSAs) often work for public

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health campaigns to expose target audiences to messages. It is the goal of these campaigns to reduce unhealthy behaviors by raising awareness of the negative consequences of these behaviors(Atkin, 2001). But research into the effectiveness of PSAs has shown mixed results (Snyder, 2001). Partly at fault is a confusion between a campaign's effects and a campaign's effectiveness (Salmon & Murray-Johnson, 2001). Where a campaign may seek to reduce unhealthy behaviors, an observable division between effects and effectiveness can be instructive.

A good example of an effective campaign that produced measurable effects was the Harvard Alcohol Project's designated driver campaign. This unique campaign was the first to integrate a health institution with the communications industry on a project of this scale (HAP, 2003). The project, which teamed with Hollywood studios and the major broadcast networks, made the term "designated driver" a part of the English vernacular. One effect of the campaign was a reduction in alcohol related traffic fatalities from 23,626 in 1988 to 17,858 in 1992, a 24% decrease over four years. This drop is significant as there was no change in the three years prior to the campaign (HAP, 2003).

These observed effects, however, should not be confused with campaign effectiveness. While the campaign appeared to have strong effects – a 24% reduction in alcohol related traffic fatalities – the campaign may only be considered effective if it increases awareness of the dangers of driving drunk and introduces the designated driver concept to a wide audience. Suppose, however, that the campaign had failed to make "designated driver" a familiar concept, but traffic related fatalities had shown a similar decrease during the

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period of the campaign. In such a case the argument could have been made that the campaign had strong effects but lacked effectiveness. Suddenly the campaign evaluators have a problem because the lack of awareness (i.e. effectiveness) implies a poor causal link between the campaign and its' theoretical effects. Therefore, it becomes important when evaluating a public health campaign to distinguish between a campaign's effects and it's effectiveness. It should be also realized that evaluation may show intended effects in the target population without considering the campaign effective.

The variance in reported effectiveness of the media based public health campaigns could result from several factors, a major one being the messages themselves. Where product marketing often has millions of dollars to dispose on messages designed to influence consumer behavior, public health campaigns often rely on much smaller budgets from government or other non-profit agency grants. Even when health projects have corporate benefactors, only a fraction of the funding used in traditional advertising is applied to the message design. This results in PSAs without the formative evaluation, audience-based evaluation, or media coverage that goes into commercial product advertising. With audiences becoming accustomed to the extremely high production values of commercial advertising, their expectations are heightened and these public health messages cannot measure up (Pinkerton, Austin, Fujioka, 2001).

Another reason for the contradictory results of these PSA campaigns could be the psychological impact of the message content (Atkin 2001). In A Theory of Psychological Reactance, Brehm introduces the idea that people have a tendency to react negatively

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when they encounter a threat to their behavioral freedom (1966). Specifically, Brehm suggests that an individual will act in some way to re-establish their freedom. In the case of these health campaigns, it may be that audiences feel threatened by the information they receive in the messages. Target audiences that engage in these unhealthy behaviors may see the recommendations promoted by the messages as a reduction in freedom of acceptable behavior. Thus, the act of pointing out unhealthy behaviors and recommending more healthy ones may actually function to maintain or increase the behavior in an attempt to re-establish the individual's feeling of freedom.

Research has indicated that humor may be a way to reduce the phenomenon of reactance. In one study of threat-related product advertising, researchers found that humorous advertisements elicited a better liking for the brand, compared to those that did not (Kucharsky, 2002). In a study of fear desensitization, researchers found that a humor-based approach was at least as effective in desensitizing participants' fear of spiders as traditional desensitization approaches (Ventis, Higby, Murdock, 2001). Further research has indicated that humor may be effective in discussing sensitive topics such as aging, death, and dying with geriatric audiences (Johnson, 1990) While these studies do not deal specifically with behavior threatening health messages, they do suggest a general pattern that humor can be effective at reducing fear and feelings of threat.

In addition, some research has indicated that humor may also have some positive effects on memory. In a study of adolescents, sentences containing humor were recalled significantly better than sentences not containing humor (Schmidt, 1994). In a semester

long study of humor use in a college lecture, the students in the humor condition scored significantly higher on a semester-end standardized test (Ziv, 1988) The results of these research projects indicate that recall of information in students may be aided when the information is presented in a humorous way.

The problem, then, lies in producing humor that will exhibit these effects. Humor in itself is a specter that is not always repeatable under the same circumstances and to demographically similar groups. Humor researchers and practitioners have frequently pointed out that humor is always audience specific (Perret, 1982; Helitzer, 1987; Helitzer 2003; Saks, 1991). Research in the field of humor has grown in the past few decades, and the analysis of how humor works can be valuable when producing humor for a specific audience. Given that public health messages are often audience specific, humor may fit well in designing public health messages.

The current work examines how humor can affect the perceptual mechanisms at work in PSAs. Two PSAs were produced, one featuring humor as a tool to potentially reduce reactance and enhance cognition, and the other without humor. These two spots allowed for a comparison of humor's effect on memory and reactance in the target population.

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Literature Review

Campaign Effects versus Effectiveness

If a campaign's goal is to produce an effective PSA, it makes sense to define the term effective. As previously discussed, there is often confusion between campaign effects and an effective campaign (Salmon & Murray-Johnson, 2001). This confusion lies partly in an evaluation of scope. Effects can be broad, reaching from individual attitude change to social and cultural change. Effectiveness is much more targeted, implying the measurement of a specific set of outcomes.

When dissecting the effectiveness of a single PSA, an issue is raised; the scope of a single PSA is not the same as the scope of the entire campaign. The problem in determining whether a PSA is effective lies in the longitudinal aspect. It will take months, if not years, to fully determine the effectiveness of a single television spot, and the effectiveness of the individual spot will probably be impossible to separate from the effectiveness of the campaign as a whole. Thus it makes more sense to evaluate a few potential precursors of effectiveness for the PSA, which *can* be measured in the short term.

In the case of this PSA, we are really searching for certain effects which suggest effectiveness. The logic behind focusing on the effects of the PSA is that the effects may add together over time to produce measurable effectiveness. For example, in order to meet an outcome of a reduction in levels of student drinking, the target audience has to

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have some memory of what they see in the message. So, in the immediate term, we can measure what the audience remembers from the spot. Further, the phenomenon of psychological reactance can act as a potential barrier to both memory of information, and acceptance of the overall message. So, measuring if the audience experiences reactance as a result of viewing the message can suggest if repeated exposure will lead to effectiveness.

Social Norms

One area of communications research addresses, and seeks to understand, the processes that result in people learning behavior in the context of their culture. Carey's (1992) tribal communications viewpoint is useful in understanding how culture is created, but it does not address specific mechanisms for how individuals designate appropriate behavior. Social Norms Theory provides a useful framework for understanding behavioral learning patterns when applied to public health campaigns. It can also be useful to identify the mechanism for producing change in the target audience.

Social Norms Theory states that individuals "measure themselves against others in assessing the appropriateness or acceptability of their own behaviors" (Lederman et al., 2001, p. 296). That is, through observance of another person's behavior, and other people's reactions to that behavior, we determine what is an accepted norm. Social norms come into play in drinking campaigns when students have misperceptions about how much and how often their peers drink. These misperceptions can lead to excessive and dangerous behaviors.

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The assumption of this perspective is that the unhealthy behaviors being exhibited are mainly based not on observed behavior, but perceived norms on an individual's part. According to the Social Norms approach, unhealthy behaviors can be reduced by bringing misperceptions into line with actual reported behavior. Because the Social Norms approach fundamentally threatens individuals' assumptions, there is a high risk of psychological reactance on the part of target audience members.

Reactance

As noted by Atkin (2001, 52), "one significant problem is that campaigns may generate counterproductive boomerang effects in which significant portions of the audience are influenced in the opposite direction." Atkin notes that psychological reactance is a particular type of boomerang effect that is often challenging when working with adolescents. Reactance, first categorized by Brehm (1966), can result in subjects exhibiting behavior that directly opposes suggestion. The counterproductive behavior is a consequence of a perceived threat to the individual's freedom of choice. In extreme examples of this phenomenon, individuals will react to the threat by exhibiting the very behavior that is threatened.

Clearly, reactance can be particularly risky as an outcome in health campaigns. When the suggested behavior is to reduce the amount of drinking, the resulting reactance could lead to increased alcohol consumption. As Brehm puts it:

"While there is no assumption a person will necessarily be aware of reactance, it should be true that when he is, he will feel an increased amount of self-direction in regard to his own behavior. That is, he will feel that he can do what he wants, that he does not have to do what he doesn't want, and that at least in regard to the freedom in question, he is the sole director of his own behavior." (1966, p. 9).

The result is the 'boomerang effect' noted by Atkin, creating campaign effects in the reverse direction for the target population.

Fear-Based Appeals

Fear appeals, messages in which harmful outcomes are shown to the target audience, are frequently employed in product advertising and health-related campaigns. A well-known example in the health arena is the anti-smoking campaign, "The Truth," which uses provocative imagery to convey information and attitudes about smoking behavior. This series of ads is memorable, if not for the specific content, for the strong message it conveys. However, for this type of intended behavioral change, the threatening connotations may actually impair the viewer from being affected

In one recent study of fear appeals, Tanner, Hunt, & Eppright (1991) found support for threatening messages, but also found evidence that individuals may have a repertoire of coping responses that can substitute for the recommended coping response. The authors note that individuals may have previously adopted "maladaptive coping responses" to reduce the threat, and that the individual's choice in coping procedure can be greatly

influenced by previous experience and social context. When applied to health-related

campaigns for moderate drinking, it is reasonable to assume the coping responses evoked

by fear appeals can lead to the boomerang effects noted by Atkin (2000), specifically

reactance.

Other research into fear-based appeals (Leventhal, 1970, & Rogers, 1975) has suggested

that the fear component in such messages may not be the most important thing in

inducing attitude or behavioral change. Similarly, Research by Boster & Mongeau

(1984), and Rotfeld (1988) found that the "'levels of fear' actually might not be a

meaningful concern" in these types of messages (Rotfeld, 1988, 34). These studies imply

that the level or presence of a fear component may not be the main component at work.

A shortfall of many threat-appeal studies is that they measure intended behavioral change

rather than longitudinal attitude and behavior change. One study by Evans et al. (1970)

looked at this very issue by examining actual versus implied behavioral change. Their

study featured 3 types of messages: high threat level, low threat level, and social approval

messages. The social approval message used an approach similar to the Social Norms

approach messages, in which events of two fictitious individuals were chronicled as an

example of appropriate normative behavior. The researchers found that the threat

messages were more effective in individual's intent to comply with suggested behavior,

but that the social approval messages led to greater retention of information and

behavioral change over time. This critical distinction suggests that while fear based

appeals may have greater immediate impact, Social Norms type messages may have a greater impact in actual behavioral change.

This study examines if humor will work in some way as a moderator for the effects of the PSA. Specific recall after limited presentation of statistics in the spot (i.e. the memory component) may be less important than humor's effects on reactance. The reasoning is that lowered reactance to the information presented can lead to increased acceptance over time to the information. Thus, an immediate memory effect might not occur, but over time, lowered reactance to the information may lead to enhanced memory. Further, if elements of the humor is accepted and enjoyed (e.g. repeatable lines of dialogue), it could become a part of the target audience's vernacular. This would be a much more impressive effect, and would be at the same time extremely difficult to measure. Regardless, if any of the information presented in the spot made it to this level, the PSA would be considered effective. The highest level of effectiveness would be the information reaching the "tipping point" and being spread through language by target audience members that were not exposed to the message.

The Study of Humor

The first requisite of using humor to create an effective PSA is to gain an understanding of how humor operates. Although humor is such a large part of our society, it has only been in the past 30 years that it has become an area of serious academic focus. The feeling among many people was that humor was not something that could be taught or learned. Only recently has humor as a field of study gained enough attention and merit

that it is taught in college courses, studied using the methods of social science, and written about in serious academic journals.

A possible basis for humor's longstanding reputation as an inappropriate field of research could stem from historical philosophical views. Plato argued that humor was based on a lack of self-knowledge, a "malevolent behaviour stemming from hurtful aggression, envy, or spite..." (Chapman & Foot, 1976, p.1). Roman authors Cicero and Quintilian put forth theories that laughter could not adequately be explained, but what was known stemmed from Aristotle's view that laughter decayed morals, and was an uncivilized behavior (Chapman & Foot, 1976).

Modern social scientists have traditionally been hesitant to investigate mechanisms of humor and laughter. Those that have, find in their research that "probably no human reaction has given rise to so many conflicting opinions as those found in works dealing with laughter." (Piddington, 1963, p.9). Morreal (1983, p.1) noted that the principal difficulty is that "it seems difficult, if not impossible, to come up with a single formula that will cover all cases of laughter." The foci of this inquiry are many and varied, but the remaining fundamental question of this academic area is: why do people laugh?

Eight Reasons for Laughing

Patricia Keith-Spiegel performed one of the late twentieth century's (1972) most thorough reviews of humor theories. She included a variety of outlooks in her analysis, addressing philosophers, sociologists, and natural scientists. Her findings split previous

humor theory into eight categories, based on the mechanisms responsible for why people laugh.

1) According to early biologists and evolutionary theorists, Keith-Spiegel surmised that one of the explanations for laughter was based on understanding of human physiology. Biological or evolutionary theory says that laughter is a 'built-in' mechanism that serves some adaptive function, or is a vestige of previous adaptive behavior. This belief was built on the observation that people in early stages of development exhibit laughter before they are capable of complex cognitive processes. Theorists from this perspective also note the many and varied positive effects that laughter brings about in the body, including the restoration of homeostasis, stabilizing of blood pressure, oxygenation of blood, facilitation of digestion, and production of feelings of well-being (Keith-Spiegel 1972).

2) Incongruity laughter denotes an appreciation of a breakdown in logic. Philosopher Arthur Schopenhauer (1819) defines laughter as the expression of a realization that a perceived concept differs from real objects. In this explanation, when "a conflict between a thought and a perception occurs, the perception is always correct," thus the laughter expresses the pleasure in the accuracy of perception over thought. (Keith-Spiegel 1972).

3) Configurational laughter occurs to self-congratulate when we assemble the images of a joke. Similar in some ways to incongruity theory, the difference between the two lies in the point at which the humor emerges. As opposed to incongruity theories, where it is the

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perception of 'disjointedness' that somehow amuses, configurational theories claim it is the "sudden 'insight' that leads to amusement" (Keith-Spiegel, 1972, p.11). Proponents of this type of humor frequently leave a meaningful gap in their jokes, which allows the audience to visually assemble the components in their heads.

4) Release theories claim that laughter happens when we need to release some unpleasant cognition. Spencer (1860) explains humor release as a condition of excess, in the form of nervous energy taking the most yielding course. Similarly, Kline (1907) considers the tensions which sometimes accompany thoughts may exceed our capacity to control our thinking, and laughter is a way of alleviating the strain involved in sustained attention (Keith-Spiegel, 1972).

5) The psychoanalytical reasoning behind laughter is to accomplish socially acceptable regression. Similar to release theory, Freud (1928) contends that the build up of energies from an occupation with the ludicrous "cannot be utilized (owing to the censoring action of the superego)" (Keith-Spiegel 1972, p.13). So for Freud, humor "signifies the triumph not only of the ego, but also of the pleasure-principle..." (Freud, 1928, p.3). Freud would most likely point to what critics refer to as "toilet humor" as a prime example of psychoanalytical humor.

6) Ambivalence theory states that laughter is "when the individual simultaneously experiences incompatible emotions or feelings" (Keith-Spiegel 1972, p.10). Monro states that "we laugh whenever, on contemplating an object or a situation, we find opposite

emotions struggling within us for mastery" (1951, p.210). This view was similarly felt by philosophers such as Descartes, Socrates, and described "in Plato's dialogue, *Philebus*... when Socrates taught Protarchus that laughter arises from the simultaneity of pleasure and pain resulting from envy and malice" (Keith-Spiegel 1972).

7) Surprise laughter occurs when we are caught off guard and laugh in appreciation. According to Keith-Spiegel, "The elements of 'surprise', 'shock', 'suddenness', or 'unexpectedness' have been regarded by many theorists as *necessary* (though not necessarily *sufficient*) conditions for humor experience" (1972, p.10). The best evidence to support these theories can be seen in the adaptation of response to a joke, when novelty (i.e. the surprise) is eliminated, the reaction to is altered (Hollingworth, 1911).

8) Superiority laughter, results from an individual feeling better than someone else. According to Aristotle, the ludicrous is found in some defect, deformity, or ugliness of another. Superiority theorists explain humorous expulsion as the elation felt in the comparison between ourselves and another person resulting in the feeling of "being less stupid, less ugly, less unfortunate, or less weak" (Keith-Spiegel, 1972). This type of humor can be most effective when directed at a person who otherwise would be considered more intelligent, attractive, fortunate, or strong. This theory explains why late night talk show hosts have such success regularly attacking politicians and others in the public arena.

Surprise and Superiority

Journalism professor Melvin Helitzer broke ground at Ohio University by teaching the

first college level comedy class in the early 80's. Interestingly, before his academic

career, Helitzer was a partner in an award winning Madison Avenue advertising firm. In

the textbook he wrote for the course, Helitzer makes a strong case that *surprise* and

superiority are really the two major reasons we laugh, and the other six are merely

subsets.

Building from Keith-Spiegel's review of humor literature, Helitzer concluded that

biological, configurational, and psychoanalytic theories fit under the guise of superiority

laughter, as all of these theories suggest the mechanism of superiority (i.e. adaptively

superior, superior speed in logically assembling incongruous images, and superior

maturity necessitating control of regression). The remaining theories - incongruity,

ambivalence, and release – all suggest surprise as being the central mechanism at work.

These theoretical perspectives can begin to provide a framework through which elements

of humor can be extracted and analyzed. They can similarly provide a scaffold from

which to develop humor for a particular audience.

Humor and Memory and Cognition

According to Atkin (2001), campaigns use three types of communication processes to

bring the target audience to the desired goal or behavior: awareness, instruction and

persuasion. Though little research has been done to investigate humor's effects in public

health campaigns, humor has been addressed in advertising and educational domains. The

elements at work in these domains closely parallel the public health campaign, and the lessons learned can be used to gain a better understanding of how humor may work in health campaigns.

Humor and Awareness

Atkin (2001) notes "most campaigns present messages that attempt to increase awareness." While there are several cognitive factors that can help influence awareness, three important factors are attention, recall, and comprehension. In a field study using promotional messages for a social event, Scott, Klein, and Bryant (1990) looked at how humor would affect awareness and recall of the event. The researchers used three existing events in three different locations, a neighborhood, a small industrial town, and farming village. The researchers used a humorous, non-humorous, and control promotional flier placed in subject's mailboxes to promote the event. Judging by attendance, the study found that the humor had a positive moderating effect on recall of information presented in the promotional advertisement. The implications are that humorous messages will help in raising awareness of an issue or event by increasing individuals' recall of the message content.

A marketing review of 1000 product-based commercials performed by the Marketing Science Institute looked at a variety of executional factors such as auditory memory devices (i.e. jingles or sound effects), on-screen characters, brand prominence, and product benefits, among others. Humor was one executional factor they found to be effective in increasing comprehension and recall (Stewart and Furse, 1986).

Instruction

Educators, especially educational psychologists, investigate and look for the mechanisms

at work in the learning process. Their goal, of course, is to understand and enhance

learning for students in the classroom. It is reasonable to assume that learning

mechanisms at work in the classroom would similarly apply to instruction in the public

health arena.

In one study of humor's effects on learning at the college level, a Tel Aviv college

professor tested humor effects on two groups of students taking the same course. The two

groups were given lectures that presented information either using humor, or without the

use of humor (Ziv 1988). The study found significant increases in average class scores

for the class taught using humor versus the class taught without humor. The implication

of this study is that humor used over time will have the effect of increasing the overall

retention of information.

Where the Ziv study addressed long-term usage of humor on a specific target population,

a more recent study looked at the short-term effects of humor on sentence and word recall

in a college-level population. Students from an introductory psychology course were

given a list of sentences to memorize, and after reading through the sentences, were given

a 5-minute arithmetic exercise as a distraction task. The subjects were either given lists

containing humorous versions of the sentences or non-humorous versions. The study

found that humorous sentences were remembered better than non-humorous sentences,

and that humorous material received increased attention and rehearsal (Schmidt 1994). The implications of these findings are that short-term recall and attention can be enhanced by the use of humor.

Persuasion

The case for humor's effect on persuasion is somewhat more limited. In a review of persuasion related humor research, Markiewicz (1974) found limited or mixed results for the effects of humor. Her conclusions were that, rather than humor being insignificant in creating an effect, most of the studies suffered from methodological problems. Many of the studies lacked a control message, and those that had a control message did not have a strong relation between the control message and the humorous message. She also concluded that these studies would benefit from working within a theoretical framework, and increasing the care and power of the statistical analyses used. In the current study, all three of these conclusions have been addressed within the experimental design.

In a more recent study of the effectiveness of humor in business ethics training at a Canadian University, researchers manipulated a Lockheed Martin training exercise which employed humorous messages depicting the Dilbert character (Lyttle, 2001). Researchers found that removing the humorous cartoons and wisecracks resulted in a reduction in reported intent to consult the Ethics Office. They further found that removing the humorous cartoons reduced the agreement with the descriptive adjective ethical. The implications of these findings are that, when the only variance between two messages is

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the inclusion of humorous elements (in this case visual and textual), the resulting persuasion is lessened.

Another recent study examined humor's effects on persuasion on threatening topics. Conway and Dube (2002) looked at how humor worked on individuals with a distress-avoidant orientation. Their hypothesis was that humor would be effective in persuasion on high-masculinity individuals where threatening topics were addressed. The researchers used two topics – melanoma prevention with sunscreen use, and AIDS prevention through condom use – in two replicate studies. They found support for their hypothesis in both studies for both men and women high in masculinity. Specifically, individuals high in masculinity reported greater predisposition toward sunscreen and greater intent to use condoms to prevent melanoma and AIDS respectively.

Humor in Reducing Threat

As noted, one potential danger of public health campaigns is the boomerang effect caused by psychological reactance. The principal mechanism at work in reactance is the individual's perceived threat from a reduction in freedom of choice. Though little to no work directly addresses humor and its' effects on reactance, some research has been performed in the health and advertising fields on how humor can be used to reduce threat and discomfort of sensitive topics. These inquiries are sufficiently parallel to the types of threat and discomfort at work in reactance that we can apply their findings to public health campaigns.

In the health education field, it has been shown that humor can diminish discomfort, ease sensitive situations, and enhance communication (Robinson,1970). Johnson (1990) extended the potential successes of humor in health education to geriatric populations to look at its value in teaching sensitive topics. In her review of medical and educational literature regarding humor, she concludes that humor "is an innovative way to promote a positive, low-anxiety environment that enhances learning" (556).

Humor can also be used to communicate ideas or information that may be otherwise hard for advertising viewers to accept. In a marketing study of product-based advertising, a Canadian team compared an ad using a threatening approach and one using a humorous presentation (Mukherjee & Dube, unpublished). The researchers presented two groups of students either a humorous cartoon advertisement for a fake sunscreen product ("Sail"), or a threat inducing advertisement for the same non-existent brand. The team found that "ads that used humor elicited a better liking for the brand." (Kucharsky, 2002, 8) In a second portion of the study, the team tested good and bad associations with words by quickly flashing them on a computer screen and having students react with either a positive keystroke or negative keystroke. The group who viewed the humorous advertising reacted much more quickly to the word "Sail" with a good response than those who viewed the threatening advertisement. These findings are significant as they suggest humor's effect in remembering advertising, but also suggest that humorous advertising makes potentially threatening information more palatable to the consumer.

Hypotheses

Given that public health campaigns attempt to influence an individual by reducing their unhealthy behavior (thus reducing their perceived freedom of choice) it is reasonable to assume that some campaigns can lead to a boomerang effect. The most prevalent effect is likely to be a reactance to the perceived reduction of freedom. While fear-based appeals have frequently been employed in health campaigns, research implies the threatening messages may not be as effective as positive normative appeals. Further, the fear components may have little or no effect in these campaigns and consequently may lead to maladaptive coping responses.

Since it has been shown that humor can reduce feelings of threat in health related education, and in threatening product-based advertising, it is likely that humor will have similar effects on reactance. Campaigns typically seek to raise awareness, instruct on behavior, and persuade, and the implications of research into humor's effects on these mechanisms has likewise been positive.

Given these findings, the following hypotheses are proposed:

H1: The humorous PSA will generate significantly less reactance than the non-humorous PSA.

H2: Respondents will exhibit significantly higher recognition memory for information presented in the humorous PSA versus the non-humorous PSA.

H3: Respondents will falsely identify information presented in non-humorous PSAs as having occurred in the message significantly more often than for the humorous PSA.

Production

The cycle for any production is broken into three parts: pre-production, the shoot, and post-production (or simply post). Because of the high cost of all the elements in producing a visual work – cameras, lights, talent, crew, locations, etc. – the shooting portion is the shortest phase of the production. This necessitates thorough planning at the pre-production stage to make for a smooth shoot. After shooting, weeks and months may be necessary to assemble, fix, and layer elements together with the footage to create the finished product. The production cycle for this project began in late April, and the final production for the data collection wrapped in mid November. The shooting took place on two evenings in the middle of July.

Pre-Production

The pre-production phase involves planning the production from start to finish, and is in many ways the phase of the production cycle where things will either come together to form a successful production, or fall apart. As noted, this is simply because most productions have a critical cost factor, and a lack of planning will cause delays or leave a team unprepared for the inevitable problems that arise prior to and during shooting. In addition, lack of planning will quickly become evident to cast and crew members, resulting in diminished credibility for the director. When working with volunteer actors and crew members, as in this instance, reliability on the part of the director is critical.

Defining the Concept

Production for this PSA was unique in that it started with a concept to test, instead of starting with a behavioral goal. The concept in this case was how humor will affect memory and reactance to the message in a public health campaign. Because this piece was to be produced on a college campus, it made sense to target the message at college-aged students. It was determined that test audiences would be more available, and that the production team would have more experience writing for and working with a college-aged audience. Given that humor is audience-specific, it is important to communicate on their level as opposed to an audience of elementary school students or elderly seniors.

Client Research

Research is always an important step in pre-production. It can help in formulating design ideas, inspire dialogue, character traits, wardrobe, and many other considerations. Research into potential message campaigns led to the discovery of a campus group composed of the Institute for Public Policy and Social Science Research, the Olin Health Center, and the Communications Department of the College of Communications, Arts, & Sciences. This group was an excellent match for the parameters of this thesis research because their target audience was college aged students, they had already done preliminary research into statistical realms of their public health area (drinking), and they were underway with a print campaign, but had no budget for a broadcast media campaign. Their needs coincided perfectly with the needs of this research.

Once a client was located, contact was made with a member of the Communications department who was involved with the group's project, Dr. Sandi Smith. Dr. Smith suggested meeting another group member from the Olin Health center, Jasmine Greenamyer. An appointment was made with Ms. Greenamyer where we discussed the campaign's needs and the needs of the humor research thesis. Ms. Greenamyer felt that we would be able to work well together to the benefit of both parties, and I was invited to the drinking campaign group's next meeting.

Campaign Development

The initial meeting with the campaign group involved fully disclosing the research thesis needs and interests in working with the group. The other group members included: Dr. Charles Atkin, chair of the Communications Department, Dr. Dennis Martell, Health Educator at the Olin Clinic, Dr. Larry Hembroff, a researcher at the Institute for Public Policy and Social Science Research, and Thomas Fediuk, a doctoral student in the Communications Department. They were interested in having broadcast media to help support their print campaign, and were happy to help with the humor research. An initial presentation of a potential timeline for the project was made. This timeline ended up being far too aggressive, but the draft was instrumental in beginning to plan out the steps for pre-production, production, and post production. The first element of the timeline involved developing a concept, and writing the script.

The campaign was based on an area of study called Social Norms Theory. The precepts of this theory state that individuals of a particular group may have preconceptions about how their peers behave in certain social situations. When these conceptions are inaccurate, Social Norms Theory proposes that informing the group in question about how their peers actually behave will lead to a modification of behavior towards the 'norm'.

For example, college students may have beliefs about what is a "normal" level of drinking for their peers. At Michigan State University this is an issue of particular importance, as the University has a strong reputation as a "party school" (Goetz, 2002). This reputation grows in status over time, and leads to beliefs about what 'normal' behavior entails. So, students may believe that it is 'normal' in their peer group to drink several nights a week, and to regularly drink to excess. The mechanisms behind this belief and the resulting behaviors may have to do with self-esteem and wanting to fit-in with their peer group. These resultant behaviors can be decidedly negative: a decrease in attention given to scholarship, and exhibition of unhealthy drinking related behaviors such as unprotected or non-consensual sex, and drinking and driving.

In order to apply Social Norms theory in this case, students' perceptions about drinking and actual behaviors had to be surveyed. The Institute for Public Policy and Social Science Research (IPPSSR) surveyed students to determine actual levels of drinking. The group looked at both regular drinking behaviors and behaviors during "celebration events", such as football tailgates, St. Patrick's Day, and spring break. The IPPSSR also

surveyed students to determine their beliefs about peers' drinking behaviors. Students indicated that they believed that it was normal to drink more than the actual reported levels of drinking.

For this campaign, the research and messages were targeted at college-aged students drinking behaviors around certain holidays and college related "celebration" events. They termed the concept "celebration drinking", as these were events that gave students a cause to celebrate. These events included welcome week, Halloween, football game days, the end of the semester, St. Patrick's Day, and spring break. The group used the information from IPPSSR and national studies about actual behavior versus perceived behavior, to choose several statistics in support of the social norms approach. These statistics were employed in their print messages.

The presumption and goal of Social Norms Theory is to reduce the number of students engaging in unhealthy behaviors by correcting misperceptions about normal drinking behavior. It was supposed that informing students about the actual data of their peers' drinking behaviors would serve to correct erroneous beliefs. Giving the students a better understanding of what is normative would supposedly put their own behavior in context, and thereby decrease incidences of unhealthy drinking behavior.

Message Concept Development

The overall goal of the message campaign was to introduce students to normative drinking behaviors, which were less extreme than the average students perceived. The group worked on the assumption that simply asking students not to engage in any drinking was an unrealistic and ineffective method for creating behavioral change. Suggesting that students engage in *moderate* drinking behaviors evoked less reactance and was a more reasonable idea to consume. Thus, moderation became a central theme of the campaign.

The print campaign messages were designed to show students at celebration events, engaged in 'typical' behaviors. The prints used photography of real MSU students engaged in activities such as playing pool at a bar, playing basketball, and throwing the football around outside the stadium. On top of these images, statistics were overlaid stating the surveyed statistics of what were 'normal' drinking behaviors. This reality motif was to be the focus of the print ads. Black and white versions were featured in the campus newspaper, and full color posters were placed in dorms and on campus bulletin boards.

Reality-based images fit well into the Social Norms campaign ideology, but a necessary component of *this* inquiry was the inclusion of humor. So, in developing a concept for the television campaign, the central question became: how can we introduce 'normal' behavior through humor?

The campaign group helped to develop some potential concepts for the television campaign. One concept tied into their reality-based imagery and the trend in television towards 'reality-based' television shows. This concept involved showing a group of students the morning after partying together. Instead of bragging about how drunk they had gotten, the students would brag about how moderate their behavior had been. While this was an interesting concept, the difficulty of making the dialogue seem like an actual conversation ruled it out.

Another concept was a satirical news show poking fun at the "Extreme" concept, which is frequently built into media designed for adolescent and young adult audiences. In this case the satire would be based upon the theme of extreme moderation, and would show the host of the show engaging in the screaming, overbearing behavior that has come to be associated with this movement. This concept was abandoned because it was felt that the satire of extremity and moderation would overshadow and confuse the message to be conveyed.

A third concept was a quiz show, where students participated by answering questions related to student-life. The show would be an archetypal quiz show with a game-show host, and three contestants. A game show was the least original concept of the three, but time and creative limitations (i.e. setting, and location requirements) made it the most feasible.

Script Development

Once a concept had been selected, script work began. The main consideration of the script was that there had to be two versions. They had to be virtually the same, with the only difference being the inclusion or exclusion of humor. The secondary consideration was that real information obtained from the IPPSSR surveys had to be included in a way that allowed for comprehension. The tertiary consideration of the script was how the humor interacted with the information and characters presented.

The scriptwriting proved to be a challenge. Creating humor is something very different from the analyzing it. In order to create a humorous message, basic principles were taken from Prof. Melvin Helitzer's book, "Comedy Writing Secrets." The core values of humor that Helitzer emphasizes are Surprise and Superiority. Both of these values were used in attempting to create a humorous script from the game-show concept.

Character Design

Starting with the premise of an archetypal game show, the characters were designed to be archetypal students. It was decided early on that there would be two male contestants and one female contestant. The message campaign was intended to reach a wide variety of college students, so it was decided the woman would provide the correct answers, and the men the incorrect answers. It was presumed that it would be easier to reach female audience members by having the woman always give the correct answer. It was also assumed that the positive effect of women identifying with the female lead would be stronger than any negative identification between males and the female lead.

To counteract the decreased attachment male audience members might have for the female character, the negative qualities of the male characters were enhanced. The first male character, Steve, was designed to be so stupid as to negate any attachment by any audience members. The back-story reasoning for Steve's involvement in the show was that he wanted to be on television. The other male contestant, Jean-Pierre, was initially designed as a German exchange student, to again minimize attachment from the audience. It was later felt that tapping into particularly strong anti-French sentiments, a result of contextual political events between France and the United States, might further diminish attachment. Jean-Pierre's reason for being on the show was to make Americans look ignorant, thus displaying French superiority.

The female character, Julie, was designed originally as a strongly academic oriented young woman. During one of the many script revisions, an editor suggested that the audience would not be as engaged by a character of this nature. A reduced interest in the character could have led to a decreased interest in their messages, so Julie's character was modified to be more generally defined as achievement oriented. She was intended to be attractive, smart, and a person who is likely to enjoy partying with friends.

These character types, along with a charismatic game-show host, were archetypal. Because of this generality, they could be treated either humorously or without being humorous by making only minor adjustments to the dialogue.

Show Format

The quiz show format provided an easy way to disseminate the information from the

IPPSSR survey in a straightforward way. The questions in this fictitious 'segment' of the

show centered on student drinking behaviors, asking what types of behaviors students

exhibited. Structuring the show in this way fit nicely with the social norms theory, as the

male contestants would give answers in line with the false assumptions that many

students had.

The humor in the humorous version functioned using elements of surprise and

superiority. The surprise elements involved how the game-show host responded to

incorrect answers. Where an archetypal game-show host would respond to incorrect

answers in polite way, the host character in this show exhibits extremely negative and

sarcastic responses. It was believed that this sarcasm would help distance the viewing

audience further from the characters giving wrong answers (i.e. "I don't want people to

react to me like that"), while also employing the mechanisms of superiority based humor.

Production Design

Once the show format was established, production design began. Working with

production designer Kim Jackson, it was determined that the show should have a modern

look, but utilize elements familiar to a college audience. The questions themselves would

be composited onto existing set pieces through the use of blue screen keying techniques.

Blue screen keying is a method of digital video compositing that "keys out" a certain

color (in this case blue), and replaces it with other video material. A benefit of this

technique was that the look of the questions could be determined at a later date in post production.

Set Design

Jackson designed a rough sketch of the set layout including the critical acting spaces for the game show host and the contestants. The blue screen question area was to be in-between the contestants and the host suggesting a linkage between the characters and the information.
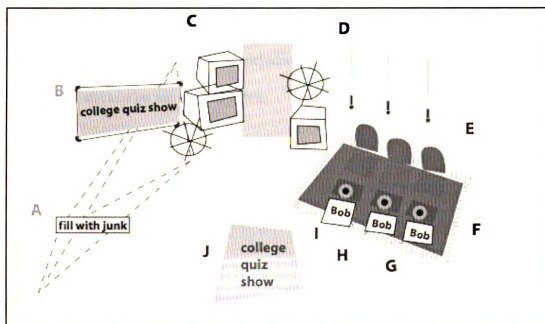
Figure 1: Set Design

The game-show host space of the stage was designed to have a hanging logo behind the host. The logo hung on three sheets of aluminum suspended by metal chain. The metallic theme repeated throughout the set to convey a consistent feel to the set. The

contestant space consisted of three theatre style seats on a platform with trays in front of the contestants to hold the buzzers Plexiglas signs painted with contestant names hung from the trays, framed with nuts and bolts to continue the metallic theme. Behind the contestants was a large stepladder (actually used for hanging and changing light fixtures in the studio), and in front of the ladder, an old bike was hung from the rafters to give an interesting but unobtrusive background texture.

The blue screen question area was framed on either side by the studio curtains. To add a feeling of depth and framing, set pieces would be placed in front of the curtain area. To further add to the "college" feeling of the set, it was decided to use pieces that would convey a college environment. This included old furniture, telephones, a television, and other pieces stacked on top of each other.

Another important aspect of production design includes color choices. In using the metallic theme, it was decided that a cool color scheme should be favored over a warm one. Various shades of blue were designed into the logo, which was produced by a graphic design firm, M27 Ltd. To offset any sharpness that may have been conveyed by the metallic structures, soft circular shapes and smooth fonts were used in the logo.
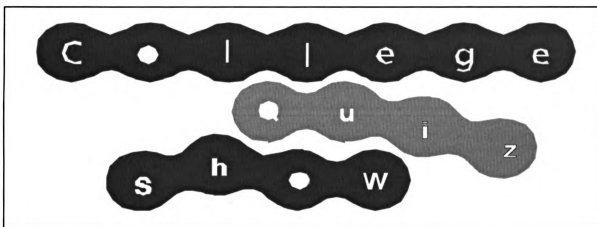
Figure 2: Logo Design

A secondary reasoning behind the use of the blue color scheme related to the inclusion of

the blue screen materials. One negative of blue screen compositing is the difficulty in

reducing artifacts around the keyed out material. Artifacts are digital degradations in the

image, for example aliasing, which creates a stair stepping effect around the keyed

materials (Tew, 2003). In addition, finer elements (e.g. hair) have a tendency to show

through some of the keyed colors. Using colors that are similar to the color to be keyed

(in this case blue), help to reduce artifacts (Meyer, 2003). For the sake of ease, the

consistent use of blue would make it easier for the viewer to overlook such artifacts.

Casting

After developing the script and overall look of the set, the next step was to select cast

members. Several considerations came into play when finding cast members, the

foremost of which was to convey the characters' personalities. This left the choice of

trying to find professional screen actors, or to work with non-professionals. Because

there are no major production companies in the Lansing area, professional screen talent is

difficult to find. While experienced theater actors are easier to locate, the challenges in translating stage based performing styles to television often take considerable training to overcome (Weston, 1999).

For these reasons, it became clear that the best selection for actors would have to be inexperienced screen performers. The main basis for character selection became similarities between the actor's personality and that of their character. Chet, the show's host, had to be charismatic and have a somewhat shallow affect. Steve, the less intelligent male contestant, had to be attractive and give an impression of lack of awareness. Julie, the female contestant, had to be an attractive female with an intense but positive personality. The remaining character, Jean-Pierre, had to have a somewhat superior air about him.

Rehearsal

Rehearsals with the cast were kept to a minimum because of the relative simplicity of the dialogue, limited availability of actors, and the individual's similarities to their characters. There was an initial meeting where lines, timing, and some basic elements of acting were rehearsed. Because the characters' movements were static for the finalized version of the screenplay, it was not necessary to go over blocking.

The main focus of the acting rehearsal time was listening. Even though the material demanded that the actors relate to each other very quickly, the pacing made it critical that

the actors focus on listening to each other and reacting rather than just memorizing the timing of their dialogue. A common problem that most inexperienced actors face is learning to listen to the other players they are working with (Weston, 1999). The result is a performance that lacks a quality of realness, principally because in a real conversation both participants listen to each other and respond in kind.

At the initial rehearsal we discussed the roles, back stories, and traits of the characters. To create a more engaging relationship between Julie and Chet, an attraction was implied between the two characters. This attraction, aided by the actors' flirtatious nature, would help the actors' listening and would come through on the screen. Even if the audience wasn't overtly aware of the flirting, they would notice some enhanced interplay between characters. This would also subtly suggest to viewers that they should pay added attention to the dialogue of Julie and Chet.

Julie's main purpose for being on the show was to win. Her character traits imply that Julie would know the categories covered on the show and would study potential information sources that the show's question writers would use. Julie is an achiever and will take measures to ensure her success.

The remaining relationships were set-up fairly simply by the characters' back-stories. Steve's reason for being on the show was simply that he wanted to look cool on TV. His motivation is paralleled by the thoughtlessness of his answers. His relative simplicity

meant that he had not gone as far to think through what he would look like if he answered questions incorrectly. His relation to the other contestants was surprised wonder at their confidence and intelligence. Steve's character fit perfectly into misperceptions of existing social norms at MSU. He clearly did not think things through, and his character always answered in excess of regular drinking patterns. The idea was that someone who exhibited the behaviors Steve was advocating would not see the consequences of their actions, much like Steve.

Jean-Pierre had unique reason for being on the show. Attempting to take advantage of real-life political and philosophical differences between France and the United States, an assumption was made that many college students at MSU would take an anti-Franco stance. They would likely expect a retaliatory response from the French. Jean-Pierre's only purpose for being on the show was to make Americans look stupid. He intended to do this by getting all the answers correct, but when this doesn't happen he begins to simply insult the students *with* his answers. Jean-Pierre's answers always accuse students of outrageously excessive drinking. The idea was that the real-life audience would react similarly to the fictitious studio audience by booing Jean-Pierre and his view of the typical MSU student.

Crew Selection

As much as the director may desire it, no production is possible without the help of others. In addition to the on-camera talent, it takes an absolute minimum of 3 crew

members to perform any shoot: the director, director of photography, and production sound mixer. These three individuals must be able to focus on their respective jobs of directing the action in front of the camera, the motion and framing of the camera, and the capturing of the best possible sound. Asking a crew member to double up on any one of these jobs compromises the quality of both.

For this production, we were lucky to have both an experienced director of photography and production sound mixer. This was important because it allowed us some flexibility in the short production cycle, and minimized the amount of basic instruction necessary to work with an inexperienced crew. Tom Lietz acted as Director of Photography, and Ryan Moon acted as production sound mixer. In addition to Lietz and Moon's assistance, Alexandra Pia and Holly Giesman also acted as grips and audio assistants.

Shooting Setup

The Shoot was planned to take two four-hour studio sessions. This seemed like a reasonable amount of time including setting lights, make-up and hair, setting shots, and working out continuity issues. A general purpose studio, Studio E, was reserved at no cost because this project was class related. A total of 3 sessions was booked in the studio to encompass setup, and 2 evenings of shooting.

In addition to the studio, one Sony DSR-300 DVCAM camera was reserved, along with two Lowell lighting kits. The lighting kits came with omni lights, good all-purpose lights

that can be used to create focused direct lighting, or more diffuse lighting through silver umbrella bounces or diffusion material. In addition to the omni lights, the kits contained two 420-watt fresnels, and two 100-watt fresnels . These are good denominations of direct lighting. These lights were used in combination with the studio lights to produce an even lighting scheme consistent with flat television lighting.

Working with the Director of Photography, and after analyzing the script, we determined that dramatic lighting would be inappropriate. Dramatic lighting is used to create an added sense of emotion to a scene, and is best utilized in a medium such as film, which has a greater contrast range of light than video (Zettl, 1999). For our purposes and script, the best lighting solution was to light the set and characters as evenly as possible.

Another visual touch we added was to put the equivalent of a soft filter in the camera. Video tends to be described as harsh looking because of its inherent sharpness. Typically in larger budget productions a filter will be placed in front of the lens to diffuse the light and create a softer look. Not having the money to rent a filter box and appropriate filter, we tried a low cost solution where a stretched pantyhose is placed in between the camera's CCD pickups and the lens (Schleicher, 2002). This helped give a softer, tube camera look to the digital video, and enhanced color tone in the beige/skin tone range.

The main lighting setup work was to evenly light the faces of the contestants without over lighting their faces or the colors of the set and clothing. Over lighting, sometimes

referred to as "blowing out", will cause areas of the screen to "wash out", or lose their definition. This results in an area of white color that not only lacks the sharpness of the rest of the shot, but also may unintentionally draw the attention of the viewer away from the focus of the shot (Zettl, 1999). Another difficulty in shooting video for broadcast lies in the relationship between the color red and its' presentation on cathode ray tube (CRT) television. Of the three primary colors (Red, Green, and Blue), the red phosphors require the most energy to appear the same brightness. So when a television set is not properly calibrated the red phosphors can over drive creating a blooming effect, giving the appearance of a halo around the colored area (Williamson, 2001). This effect can easily occur when editing footage on a digital system where enhanced resolution (or a different display technology) hides the problem.

Steve's character was dressed in a beige cowboy shirt with deep burgundy-red trim. Despite this danger, we felt that the deep red would work effectively and provide a vivid color consistent with Steve's character qualities. In effect, he would be wearing clothing to impress. Julie's character wore a pink top, again consistent with her character traits; smart and attractive, but not too showy. Jean-Pierre was dressed in a purple turtleneck to heighten the cliché of the French person. The color purple was again consistent with character traits, showy and giving a feeling of imperialism. The host character was dressed in a dark colored suit with pinstripes, effective to present his character as someone concerned with looking good.

Set Dressing

Initial set dressing took place a day before shooting to give ample time to set-up materials, and begin to plan lighting schemes. Production Designer Kim Jackson had used the logo designed by M27 as a template and had printed out a large-scale logo on three 5 foot strips of clear contact paper. These strips were attached to the floor in the central area of the set, so that it would be visible from a long shot, and from any high-angle shots.

Figure 3: Long Shot of Set

Similarly, a two-piece contact paper logo was printed and stretched across three aluminum panes to form the main logo behind the game-show host. The main logo piece was hung from metal chain approximately 10 feet in length, suspended from a utility pole

intended for hanging drape material. The host's microphone was constructed from a length of metal tubing, capped at the end with a screen from a sink tap. This was the principal backdrop evident in every host shot.

Figure 4: Medium Shot of Host Area

The contestant area had been designed minimally, utilizing existing platforms available in the studio. On top of the platforms were placed three theater-style seats, which had been transported from a New York City theater. Wooden TV trays sat in front of the contestants to hold the buzzers and nameplates. The buzzers were constructed out of spherical shaped rubber gaskets glued on top of circular plastic grating. Jackson designed the buzzers with small lights inside the grating material to be activated when the

contestants rang in. Although this would have significantly enhanced the look of the buzzer ringing, the mechanics of having to manually activate each light by plugging and unplugging the light source was deemed an unnecessary difficulty.

Contestants' name signs were hung on the front of the TV trays using fishing wire. The fishing wire allowed the signs to remain attached without attracting attention to the mechanism for attaching them. The signs were made of Plexiglas, and used a blue paint marker to make the names stand out and be readable. To frame the nameplates and enhance the metallic/junk theme earlier established, Jackson had glued screws, bolts, and nuts on the exterior of the sign using an epoxy.

Figure 5: 3-Shot of Contestants

A stepladder, usually used for manipulating the studio lighting, was placed behind the theater seating to provide depth between the contestants and the backdrop curtain. The stepladder also served an aesthetic purpose to create an attractive diagonal line in the shot. Additionally, to enhance the junk imagery, a classic green Schwinn bicycle was hung from the rafters. The bike again enhanced the imagery of the junky feel, and added aesthetically pleasing lines to draw the viewer's eye towards the characters.

The blue screen area, where the questions would later be composited, was formed between the contestant area and the host area. An existing blue screen installation in the studio was framed on either side by studio curtains. In front of the curtains were placed a

variety of chairs, tables, desks, TV's, and telephones found in the furniture storage area of the studio. All these elements helped to enhance the junk/college theme, and wherever possible silvery or metallic structures were utilized.

Figure 6: Blue Screen Area

Shooting

The first evening of shooting began with the arrival of the cast. The cast was dressed in their appropriate wardrobes and began the process of make-up. The principal difference between TV and theater make-up is the degree of enhancement. Where normal make-up smoothes features and enhances facial elements such as eyes and cheeks, theater make-up has to accomplish the same goal, but at a much greater distance. For this reason, theater

make-up tends to look extreme at close distance. TV make-up finds a medium between the two, smoothing and enhancing, but not to the degree of theater make-up.

Only a few basic colors of base were used for the characters, giving the host and Steve a darker color consistent with their characters emphasis on looks. All characters used blush on their cheeks to give their complexion a more natural looking red tinge. A light coating of powder smoothed out highlights and decreased the shininess of the lighting on their made-up complexions.

Equipment Set-Up

It was decided in preliminary planning that a using single camera would be better than trying to coordinate a two-camera setup. The main advantage of the two-camera approach is that it speeds up shooting by giving multiple angles in a single take, while helping to maintain continuity among takes. The enhanced speed comes from not having to do camera and lighting setups for two individual angles. However, this gain in shooting time can be outweighed by the complexity of lighting both shots, and coordinating time code on both cameras.

In addition, there are sound considerations in having to mic two shots at once. With our small crew size, two individuals would be necessary to adequately track the actors in each shot with shotgun microphones. Having a second microphone and boom operator also doubles the chance of unintentionally getting a shadow in the shot. Finally, the

inclusion of a second mic and operator would require increased mixing attention from the Production Sound Mixer to calibrate and keep audio levels from peaking. Any recording medium has a limited dynamic range for recording the audio, and when the audio level goes above the maximum (or 'peak) level, this is referred to as peaking. This was a critical consideration because peaking in digital recording causes very noticeable artifacts in the audio, and essentially loses the audio information that is above the peak levels.

For these reasons, it was determined a single camera would allow efficient movement through the material, while still allowing for the concentration of quality in each individual shot. Additional benefits included saving money on tapes, and extra time for the inexperienced actors to warm-up their performances in the stage environment.

The game-show host has a majority of the dialogue and screen time, so his shots were the concentration of the first day. We used primarily Medium Close Up (MCU) and Close-Up (CU) shots of the host to pick up the details of his performance. The script had been not thoroughly timed at this point, so this first evening also helped get the timing and pacing of the dialogue correct. In order to fit into the 60-second time constraint, dialogue had to be performed very quickly, while still having the actors focus on listening to each other.

Day two of shooting concentrated primarily on shooting three shots, two shots, close shots and close-ups of the contestants. The three shots were important to establish the

spatial relation between contestants, and the close-ups provided the important details of their portrayals of the game being played. The two shots were never used, but were included in case the editing allowed for establishing relationships between individual sets of contestants (i.e. Julie and Steve, or Julie and Jean-Pierre).

Post Production

The Post Production phase often takes the longest of the three because the elements that have been designed and recorded must be layered to create a finish product. It is arguably the most creative phase because the producer takes the work that has been done - the script, the video, and any other collected elements - in their raw form and must fit them into the requirements set at the beginning of the pre-production process.

In this project, post production began with the raw video and production audio, and the requirement of producing two similar 60 second PSAs. The only difference between the two finished pieces was to be the inclusion or exclusion of humor. The raw video and audio had to be sculpted to create an appealing and coherent visual narrative of an extremely short duration. Sound effects and music had to be added, and titles and motion graphics had to be composited on top of the footage to create this narrative.

Editing

The first step in the post production process is editing the footage. Editing video is a unique creative process in itself. If the director and director of photography have done

their jobs, there will be adequate coverage of the visual components to splice together a narrative. Coverage refers to a variety of shots, both framing (Wide, Medium, Close Up) and angle. This production had mostly close framings, with individual shots generally framed from chest or shoulders to the top of the head. In addition, there was one long shot designed to establish the screen space of the entire set. The only other shots were two and three shots of the contestants, showing relationships between two and three of the contestants respectively.

The first shot of the edited piece was the establishing shot of the entire stage. This shot included the dialogue of the host welcoming the viewer 'back' to the fictitious show. The next shot was a medium shot showing the host in greater detail. In this segment of the script the host refers to the contestants, so the next logical shot to cut to is a three shot of the contestants. The camera then returns to the host, as he begins the question-answering phase of the show.

This introductory segment took approximately 10 seconds. From an editing perspective, it was important to establish both the story world of the show as well as the spatial relationship of the set and characters before moving into the question and answer segment. The next segment, the question and answer portion, is the largest cohesive unit of the spot. This segment had to include three questions and answers which would disseminate the campaign's message.

Cutting together the question and answer sections depended primarily on pacing and shot selection. The goal was to establish a consistent rhythm in both the humorous and non-humorous spots. As the host asked the questions, the big board would appear with the questions in text form. This provided the audience with a visual channel to augment the sound channel. Coming out of the question shot, the next shot would always be the three shot of the contestants to re-establish the connection to the three contestants. As one of the contestants rang in, the next shot would be a medium close-up of the host announcing the name of the contestant who rang in. After the host called the contestant's name, the next shot would move to a medium close shot or close-up of that individual.

Next, the contestant would respond to the question. If they gave an incorrect answer (i.e. Steve or Jean-Pierre answered), the frame would return to the host in time to catch the negative audio response in the sound effects track. This also allowed the host to respond visually with a negative reaction and appropriately sarcastic dialogue. Showing the host's response in this way helped to solidify the audience's reaction to the contestant's response as inappropriate. If a wrong answer was given, the camera would stay with the host to allow other contestants to ring in, followed by a return to the three shot to re-establish the fact that the two remaining contestants were again competing. In cases where a correct answer was given (i.e. Julie responded), the shot would stay on her until the answer was verified by her facial expression and audio signal. Once verified, the frame would return to the host to visually emphasize the correctness of her answer.

The final segment of the spot consisted of the host's closing remarks. After verifying the final correct answer, the host encouraged the viewing audience to "stay tuned to college quiz show." This shot and accompanying dialogue acted in part to keep with the 'reality' of the fake quiz-show world, but also in a sense to encourage the viewers to 'stay tuned' into the message of the show. The host finishes by telling the viewers that "Spartans watch out for Spartans," a line intended to encourage the intended audience to watch out for each other, another message the drinking study group wanted to convey. After this final encouragement from the host, a final still shot of the campus Sparty statue was used to convey to the audience that all the information is pertinent to the MSU community.

Motion Graphic Design

Once initial editing was done, the next visual elements that needed to be placed were the motion graphic composites. There would be a total of 5 graphic composites in the spot, including a graphic at the beginning, the three question graphics, and an ending composite. The composites helped to add a more professional look and layering to give the spot a feel of added depth.

Introduction Graphic

The introductory graphic was placed over the long establishing shot when the host welcomed the contestants back to the show. This seemed to be a good time to include the logo design, as a logo would most likely appear when returning from a commercial break. Though the spot itself is like a commercial, the setup for the 'story' of the spot is that we have re-joined a game show already in progress. The show "re-entry" composite, then,

utilized a vector graphic logo provided by the M27 design firm. The graphic is quickly faded in, and then spun around three dimensionally in the y-axis. This provided a nice effect of depth, and although a fairly simple operation, still provided the look of a well produced show. In addition to the spinning effect, a drop shadow was applied to the logo to further enhance its' depth.

The question compositing was much more challenging than the introductory graphic. In addition to the motion and graphic design that had to be performed, it had to be keyed in to the existing footage of the blue screen area. The first step was creating the graphics, which were kept as simple as possible. Research had indicated that keying in composites is easier when using background colors similar to the color being keyed out (Meyers, 2003). Since blue was the color being keyed out, a blue background was used for the overall graphic. In order to provide some texture to the background, a thin gray grid was placed on the background layer as well. On top of the background layer, the visual motif of the spinning logo from the introduction was repeated, but placed at a diagonal to heighten visual interest.

Question Graphics

The questions themselves appeared on a flat green background. While green may not have been the best choice to match the blue, the flat green served several aesthetic purposes. Mainly, the color had to stand out from the background and it should tie into the overall theme of the campaign. Green was an appropriate choice because it would

bring instant recognition as to the audience when coupled with white text. Another thin gray grid was placed on the green question card to again provide texture.

The question cards mimic the introductory visual motif by spinning in the third dimensional y-axis. This is coupled with a fading in effect to produce visually appealing motion without being overly distracting. The first question composite had the double duty of presenting the topic area (Drinking Statistics) as well as presenting the first question. The spinning and fading effect was thus repeated first for the topic area, and again for the question itself. Three 'light sweeps' were added in the horizontal, vertical, and diagonal directions, mimicking the effects of a searchlight. These sweeps provided an attractive visual motion, and were intended to direct the viewer's eyes through the reading of the questions. The sweeps were placed on the background layer behind the actual question cards, but the slightly lowered opacity of the green-grid layer allowed the sweeps to very gently shine through the question cards. All three questions utilized this same format.

Blue Screen Keying

The blue screen keying was the next visual challenge. Keying is an art to itself, and while modern tools make it easier, it is still tricky to get a clean effect. The art relies on the principle of digitizing footage and removing some part of the digitized footage. Another piece of the composite will eventually show through the keyed out material, in this case the questions and grid background. In order to pull out areas of the footage in real-time (as opposed to masking, which removes a static form from the image), the keyer

uses a mathematical value or formula to determine what should be removed. In color

keying, the chrominance value of the digitized footage is used to determine if the footage

should stay or be removed.

There are several keying methods available in most modern compositing suites,

dependent on either colors, alpha channels, or luminance values. Because the footage

had been shot using a blue screen, a color key was most appropriate, specifically a linear

color key. A linear key allows for the selection of a main key color, and a range of colors

matching the tolerance settings. This is useful, for example, when the blue screen is

painted in one even tone, but is not lit optimally (Meyer, p.147). When the footage is

digitized, even though the screen is all one color its chrominance values will appear as

different colors. The key will compensate for this by allowing colors within a certain

'range' of colors from the main color.

A particularly difficult aspect of color keying is in lighting the screen evenly. Although

our eyes may be tolerant to difference in shades between colors, digital video has

relatively low color resolution. In addition, the mathematical precision needed to remove

specific colors (even with some tolerance) can lead to "stair-stepped" gradations of colors

in proximity to each other. When the key is applied, the main color is pulled out but

there remains a good deal of the screen still in view. The linear key allows us to increase

tolerance, meaning colors farther away in value from the principle key color will be

pulled out as well. The problem is that as the tolerance increases, it becomes more and

more likely that pieces of the footage that are not meant to be keyed will be removed as well.

For the final key to look acceptable, it was necessary to use another important compositing tool, the mask. Masks select ranges of the video area and either cut out everything within or outside of that range. Because the production video blue screen image was not lit evenly, applying a mask the blue screen area allowed the key to concentrate on just the blue screen area. This meant that the surrounding image, including the blue curtain and certain colors in the metallic 'junk' around the blue screen, would be unaffected.

Ending Composite

The last composite shot used in the spot was the closing sequence of the spot. The initial shot in this sequence was the medium close-up of the host giving the final message. In order to echo and strengthen the message he was giving verbally (i.e. "Spartans watch out for Spartans"),the text of the message was overlaid on top of the host's image. The text was given a metallic texture to fit in with the overall metallic theme of the production design. Additionally, the text was colored green and given a thin white border to enhance readability and to go with the Michigan State motif. To help in guiding the viewer's eye across the text, a horizontal light sweep similar to the sweep in the question screen was applied moving across the text at approximately the same pace as it was read aloud.

After the host finishes talking he is given appropriate time to flash his charismatic smile, and then his image is faded out underneath the text. An image of "Sparty", the familiar campus statue is faded on in the host's place, in a similar size and framing as the host. At the top third of the screen another text message is faded on indicating the website address that students can refer to for more information. The ending message text is faded out, and in its place a message is shown indicating the groups responsible for the airing of the message. This type of message is normally included at the end of most PSAs.

The Soundtrack

The final addition that would make the spot ready for testing and distribution was the assembly of the soundtrack. Though often ignored or undervalued compared to the visual elements, the sound elements of a production are at least as, if not more important than the imagery that appears on screen. This is ironic because modern audiences have become so accustomed to high quality soundtracks in movies and television. Similarly, the tools to make, edit, and effect high quality recordings and music are relatively inexpensive and available to even the beginning sound designer, so this critical piece of the visual narrative should always receive as much focus as the visual design.

Dialogue Tracks

The soundtrack production began by pulling out the individual audio tracks from the production sound mix and bringing them into a multi-track audio editor. Because the timing had not been set in rehearsals, it was left to the editing phase to establish the

pacing of the dialogue and shots to create a 60 second spot. One result of this was that individual shots that were overlaid in the nonlinear editing process often included other characters' dialogue. Therefore, the initial work consisted of smoothly bringing down levels of other characters' dialogue events, and bringing up other dialogue to an approximately matching level.

In cases where dialogue levels were brought up, a result is the increase of unwanted noise such as room tone, the ambient sound in a room. Noise reduction algorithms in the editing software were used in these cases. These noise reduction plug-ins first sample the noise so the software gets a 'picture' of where the noise reside in the spectrum. The noise reduction effect then looks for similar noise "imagery" and levels, then pulls these out of the affected clip. While the operation is not perfect, it can substantially reduce extra noise in production audio tracks, leaving behind the principal components of the sound.

Once the dialogue levels approximately match in volume and tone, perspective has to be taken into account. This process mimics the binaural way in which our brain locates a sound source in space (Zettl, 1999). For instance, in the initial shot the host is at a distance from the camera, but in order to immediately bring the viewing audience into the story world the audio from a closer shot was used. This was an aesthetic choice to subtly manipulate the audience. Also, in close-up or three shots of the contestants, audio was captured in mono. The final soundtrack, however, was produced in stereo, so it was necessary to do some slight panning, and modifying of levels to approximate what the "studio audience" might hear from the stage.

Panning indicates placing audio at a point within the stereo field. When all three characters were onscreen, audio from the leftmost character, Steve, was panned to the left to approximate his placement on screen. Because humans use both of their ears to locate sounds in space, placing screen-based sounds within a stereo field helps to heighten the feeling of realism for the viewer (Zettl, 1999).

Sound Effects

The next portion of the soundtrack to enhance the onscreen elements were sound effects. A variety of sound effects were included to heighten the impact of visual events on screen and to create a more 'realistic' environment. Starting at the first shot, a medium sized audience applause effect was added, and copied on top of itself to provide the sense that a studio audience of about 100-150 people were watching the game show. To augment the impact of the visually composited game show logo, a whoosh effect was applied as well.

A major effect challenge was the positive and negative feedback required when contestants answered questions. The visual editing had left 'dead spots' with an approximate amount of time for the feedback to sound before the character's reaction. This was one of the bigger difficulties in editing, essentially forcing the editor to hear events that did not yet exist.

The effects consisted of two distinct sound elements composited together to produce an appropriate noise. The 'buzzing in' sound effect was composed of two effects; a pleasing ringing type noise coupled with a sound best described as electronic crickets. The correct and incorrect response effects were similarly composed of two effects, using a buzzer for the main negative motif and a chime as the main positive one. These positive and negative sounds were accompanied by appropriate audience reactions as well. Negative audience responses increased in magnitude as time went on, indicating an increased frustration with Steve and Jean-Pierre. The response to Julie was always positive, but consisted of two or more applause and cheering effects.

Other audience response was placed at the end, with the audience happily cheering the current state of the game, and conveying their interest in the continuance of the show. It is also implied that their cheering is an unstated approval of the information contained in the show in general. All sound effects were purchased online from a royalty-free sound effect company.

The last sound element to be included in the sound track was the music. The music was intended to provide initial energy for the show, and augment the performance of the show's host. The same tune was used at the beginning and the end, and tried to match the overall feel of the spot – simultaneously earnest, and well aware of its' own cheesiness. The music, a vaguely ethnic sounding electronic track was taken from a royalty-free music library.

Evaluation

Overview

The two versions of the PSA were first pre-tested to check the measures and determine that the spots were significantly different in perceived humor. Before the pre-test, the spot was shown to a test group of students in a persuasive communication research class. Those students indicated that the extremely fast pacing of the spot made it difficult to hear all the dialogue in one viewing. The rapid pace was intentional, as there was a fear the target audience may be sensitized to the spot on one viewing. After a second viewing, the students heard more dialogue and perceived the spot as more humorous. For this reason, the PSA was shown twice in the pre-test to get a better assessment of the humor component. The pre-testing indicated that the two spots were significantly different in perception of humor.

For the actual experiment, there were 2 different groups. The first group viewed the humorous version of the PSA twice, followed by a 3-minute Yoga demonstration piece, also produced by a student. The second group viewed the non-humorous version twice, followed by the same 3-minute distraction piece. The Yoga piece was included to distract the participants for a more realistic memory measure. After the 3-minute video both groups were given the assessment scales.

Participants

Participants were 58 students enrolled in an undergraduate media arts course. They were voluntary participants in the study and did not receive academic credit. The sample was

81.4% male, and had a mean age of 20.8 years (SD=1.89). Of the participants, 21

reported living in the dorms, and 37 indicated they did not live in dorms.

Measurement

Reactance. Six Likert type items measured reactance. The 6 reactance items were

adapted from the modified Hong Reactance Scale (Hong, 1996), and are shown in

Appendix A (items 2, 5, 8, 15, 16, 18). The reactance items had an alpha reliability = .82

out of 1.0, indicating that the test items had a strong internal reliability (Brown, 2002).

Humor. The six items measuring humor (items 4, 7, 10, 12, 14, 17) are also provided in

Appendix A. Alpha reliability for this scale was .91, also a strong measure of internal

reliability.

Memory Recognition. In addition to the Likert type scale, there were 15 items intended to

determine memory recognition (Appendix B). Five items (numbers 3, 7, 9, 13, 14) were

facts presented in the PSA. In addition to items presented in the PSA, there were 10 items

not presented in the PSA. Half of these items (numbers 2, 4, 6, 10, 11) were messages

contained in the same campaign but not this PSA, and the other (numbers 1, 5, 8, 12, 15)

half were false assumptions taken from the IPPSSR survey. The items contained in the

campaign but not the PSA were defined as plausible false alarms, and the items taken

from the IPPSSR survey were defined as implausible false alarms. Items that did appear

in the PSA were defined as "hits".

Results

The six humor items were used as a manipulation check to maintain that the two spots were significantly different in perceived humor. Respondents in the main experiment perceived that the humorous PSA (M = 5.02) was significantly funnier than the non-humorous PSA (M = 3.93), according to an analysis of variance (ANOVA) between means (t (55) = 3.4, p < .001).

In addition, perceived credibility of the two PSAs was determined through the use of a seven item Likert-type scale on message credibility (Appendix A.) This scale achieved alpha reliability of .87, and no significant differences were found for perceived credibility between the two versions of the PSA (t (55) = 1.49, p >.05), with the humorous PSA perceived credibility rating of 4.48 and the non-humorous credibility rating of 4.07 (on a seven point scale). Thus, participants did perceive the two PSAs to be significantly different in terms of humor, but not significantly different in terms of message credibility.

Hypothesis One

Hypothesis One predicted that the humorous PSA would generate significantly less reactance than the non-humorous PSA. A t test was performed on respondents' reported feelings of reactance. The results indicated no significant difference between groups in measurement of reactance (t (55) = -.887, p >.05). However, a post hoc analysis of the relationship between perceived humor and reactance indicated that among *both* groups, there was a significant correlation between perceived humor and reactance (r = -.46), with reactance decreasing as perceived humor increased. Therefore, while the hypothesis

was not supported, a significant negative relationship was found between perceived humor and reactance no matter which PSA was presented.

Hypothesis Two

The prediction here was that respondents would exhibit significantly higher recognition memory for information presented in the humorous PSA versus the non-humorous PSA. A t test was performed on these data that indicated both PSAs generated equally high hit rates (Ms = .88 for both conditions) (t (55) = -.056, p >.05). Support was not found for this hypothesis, but high hit rates for each condition indicated that respondents recalled the message well.

Hypothesis Three

It was predicted that respondents would falsely identify information presented in non-humorous PSAs as having occurred in the message significantly more often than for the humorous PSA. Recall that there were two different types of false alarms here. The first were the message relevant items. The false alarm rate for the 5 message relevant items was .15 for the humorous PSA and .128 for the non-humorous PSA, with no significant difference between groups (t (55) = .723, p >.05). There was, however, a significant difference observed for the false alarm rate on typical belief items between groups. The false alarms for the typical belief items was significantly lower (.05) for the humorous condition than for the non-humorous condition (.15) (t (55) = -.2.24, p <.04). Therefore, partial support was found for Hypothesis 3.

Discussion

Though there were no significant differences between the more and less humorous PSAs

in the reactance measures, the observed correlation between perceived humor and

reactance indicates support for the notion which underpinned Hypothesis 1. As the dress,

pacing, and character interactions in both PSAs had humorous elements to them that were

not intrinsic in the dialogue, humor could have been perceived in both PSAs. Therefore,

the individual differences in perceptions of humor rather than the humorous or non-

humorous dialogue drove the predicted relationship with reactance. This is an important

finding for health researchers. It indicates that adding humor to health messages may

mitigate the effect of reactance.

The high percentage of recognition memory hits in both the humorous and non-humorous

conditions indicates that both PSAs were effective in terms of accurate recall of the

messages. Previous research was split on whether or not humor aided recall, and while

these findings do not find support to an extra boost due to recall, they also show that

humor does not impair recall. This claim is further buttressed by the finding that message

relevant false alarm rates did not differ in either message condition.

The finding of a significant difference between conditions for typical belief false

assumptions does partially indicate support for Hypothesis 3. Here, the effects of humor

can be seen to reduce typical belief false alarms. This means that humor might be acting

as a deterrent to the activation of typical misperceptions about social norms.

As with any study, there are some limitations to this research. While this is but one message that is part of a campaign, it is important to pretest separate PSAs in order to measure message attention, believability, and recall (Novelli, 1982). In addition, the main study had a very large proportion of male respondents. Masculinity as an individual difference variable has been found to increase the effects of humor in persuasion (Conway and Dube, 2002)

Future research needs to examine the effects of different types of humor, such as surprise versus superiority, for different audiences on different health topics. In addition, the effect of humor on persuasive outcomes in health needs to be studied. In terms of this campaign, the effects of the more humorous PSA on perceptions of frequency and amount of peer drinking habits should be assessed, as should actual alcohol consumption patterns.

Conclusions

Despite the relatively small body of work on humor and its effects in persuasion in the public health arena, the findings of this study indicate that more work should be done in this area. The observed negative correlation between humor and reactance should be further studied, and expanded to look at other mediators of boomerang effects.

The observed effects of humor in relation to decreased incidences of typical belief false assumptions should also be further investigated. This could be a potentially important finding given the assumptions of Social Norms work. If these findings could be

replicated, Social Norms campaigns may benefit from the use of humor in reducing egregious false assumptions about behaviors in the target audience.

From this study it would appear that humor, if controlled for, can be a valuable tool in creating persuasive health media. It is also worth noting that humor can aid in overcoming production deficiencies. In this case, the acting, set, and cameras were not professional quality, but the strength of the humor helped prevail over these deficiencies to create a persuasive piece of media.

The celebration 3drinking group did end up using this spot in their campaign. By the time final testing had been completed, the football season was over, but another version was produced for spring break, and it was aired on the campus cable system.

The end result of years of preparation, and months of planning and production were two 60-second public service announcements. While the production quality was sufficient for the purposes of this study and its target population, these media would probably not stand up to national critique. By trying to make things look as professional as possible with low-level equipment and sets, the producer makes his job twice as hard. In this case, the audience reacts more to the expectation of production quality than the content. The humor helps to alleviate some of this pressure, but the script has to be very funny in parallel with the visual humor.

Finally, a less cliché approach would have helped create more surprising and effective humor. In addition, the effort to make the visuals appear as "professional" as possible seems to be somewhat wasted. This attempt is analogous to the video artist's attempt to achieve a "film-look" with video. Because the tools are not congruent in terms of resolution, frame-rate, and storage mechanism, the one medium will never look like the other. Similarly, trying to create a "professional" looking commercial spot with a lower-end ENG-style video camera, inexperienced acting and directing, and rudimentary set design cannot hope to accomplish look of a spot produced by a nationally reputable advertising firm. By very definition, all of these components are amateur rather than professional.

Therefore, time would be better spent trying to match the reality of the equipment (i.e. its immediacy or approachability) to the script. In retrospect, while the composition of two spots based on a "reality-show" motif may have been more difficult it may have been more effective. Nonetheless, the lessons learned despite, and because of, the production quality were worth the completion of the project in its current state.

APPENDIX A

REACTANCE, HUMOR, AND CREDIBILITY MEASURES

1. I felt that the message presented in the PSA was appropriate.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                 agree       strongly
```

2. I felt resistance toward the PSA because it was designed to influence me.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                 agree       strongly
```

3. I felt that the information presented in the PSA was effective.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                 agree       strongly
```

4. I thought that the PSA was amusing.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                 agree       strongly
```

5. I was frustrated that the PSA suggested that I am unable to make free and independent decisions.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                 agree       strongly
```

6. I felt that the message sender in the PSA was knowledgeable.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                 agree       strongly
```

7. The messages in the PSA made me chuckle.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                 agree       strongly
```

8. It made me angry that the PSA used students as characters to influence my behavior.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                 agree       strongly
```

9. I felt that the information presented in the PSA was thorough.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                  agree       strongly
```

10. I found myself smiling while watching the PSA

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                  agree       strongly
```

11. I felt that the message sender in the PSA was credible.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                  agree       strongly
```

12. I did not think the PSA was humorous.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                  agree       strongly
```

13. I felt that the message sender in the PSA was reliable.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                  agree       strongly
```

14. I felt that this PSA was entertaining.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                  agree       strongly
```

15. I considered the advice from the PSA to be an intrusion.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                  agree       strongly
```

16. It irritated me when the PSA pointed things that are obvious to me.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                  agree       strongly
```

17. I was not amused by the messages in this PSA.

```
1------------2------------3------------4------------5------------6------------7
strongly    disagree                  neutral                  agree       strongly
```

18. Advice and recommendations from this PSA will induce me to do just the opposite.

1-------------2-------------3-------------4-------------5-------------6-------------7

strongly   disagree   neutral   agree   strongly

19. I felt the characters in the PSA were dressed appropriately.

1-------------2-------------3-------------4-------------5-------------6-------------7

strongly   disagree   neutral   agree   strongly

APPENDIX B

MEMORY MEASURES

1. Less than half of MSU students track the number of drinks they consume.

Saw   Didn't See

2. 9 out of 10 MSU students eat before drinking.

Saw   Didn't See

3. 2/3^{rds} of MSU students drink moderately or not at all.

Saw   Didn't See

4. Most MSU students drink 1 time per week or less.

Saw   Didn't See

5. 9 out of 10 MSU students drink alcohol at tailgates.

Saw   Didn't See

6. 2/3^{rds} of MSU students make plans with someone to watch out for them when partying.

Saw   Didn't See

7. 6 out of 10 MSU students have 5 or fewer drinks when they party.

Saw   Didn't See

8. Half or more MSU students drink more than 5 drinks in one evening.

Saw   Didn't See

9. 5 or fewer drinks is considered moderate drinking.

10. 80% of MSU students say they would help a friend who has been drinking too much.

Saw   Didn't See

11. 2/3^{rds} of MSU students track how many drinks they have when partying.

Saw   Didn't See

12. Half or more of MSU students drink more than once a week.

Saw   Didn't See

13. 80% of MSU students drink moderately or not at all on football Saturdays.

Saw   Didn't See

14. Most MSU students think their peers drink more than they actually do.

Saw   Didn't See

15. One third or more of MSU students drink more than one drink per hour.

Saw   Didn't See

Quiz Show PSA

Open on Game show set looking through the front row of the audience, with Chet across from contestants. This is a fast-paced show where students can win tuition credits, and other prizes like trips and cars.

Chet Cleeven
Welcome back to College Quiz Show! We've met our contestants: Steve, Julie, and Jean-Pierre.

Contestants wave. Steve is attractive, athletic, and looks not so bright. Julie is attractive and motivated to win. Jean-Pierre is dressed in all black, looks like an art student or a vampire or both. he is clearly waving a French flag.

Chet
So let's get on with the show. The next category is everyone's favorite: drinking statistics!
Blank out of ten MSU students drink less than 5 drinks when they party?

Jean-Pierre rings in. Jean-Pierre?

Jean-Pierre:
Zero.
Crowd seems offended by this from foreigner

Chet:
Oh, sorry, not correct. Julie or Steve?

Steve looking at girls is startled and accidentally rings in.

Chet:
Steve?

Steve:
True.
Goes for 'high five', but no one is there

Chet:
Looking for a number. Julie?

Julie:

Six out of ten?

<div style="text-align:center">Chet:</div>

Correct. Next Question: How many times a week do most MSU students drink?
Looking for a number Steve.

Steve rings in. Steve?

<div style="text-align:center">Steve:</div>

Six.

Crowd seems more agitated.

Not your friends. *Julie rings in.* Julie?

<div style="text-align:center">Julie:
rings in</div>

One.

<div style="text-align:center">Chet:</div>

Correct.

Final question: Approximately what percentage of MSU students drink
moderately or not at all
(a. on Halloween
(b. on Football Game Saturdays
(c. during Spring break
(d. on St. Patrick's day

<div style="text-align:center">Jean-Pierre:
rings in</div>

Zero.

Crowd starts booing Jean-Pierre's insult.

Nobody likes you. *Julie rings in.* Julie.

<div style="text-align:center">Julie:</div>

(a. 80%
(b. 80%
(c. 70%
(d. 80%

<div style="text-align:center">Chet:</div>

Correct again! Stay tuned in to College Quiz Show, for the lightning round, and
remember Spartans watch out for Spartans.

<div style="text-align:center">*goto "card"*
Announcer:</div>

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APPENDIX D

NON-HUMOROUS PSA SCRIPT

Quiz Show PSA

Open on Game show set looking through the front row of the audience, with Chet across from contestants. This is a fast-paced show where students can win tuition credits, and other prizes like trips and cars.

Chet Cleeven

Welcome back to College Quiz Show! We've met our contestants: Steve, Julie, and Jean-Pierre.

Contestants wave. Steve is attractive, athletic, and looks not so bright. Julie is attractive and motivated to win. Jean-Pierre is dressed in all black, looks like an art student or a vampire or both. he is clearly waving a French flag.

Chet

So let's get on with the show. The next category is everyone's favorite: drinking statistics!
Blank out of ten MSU students drink less than 5 drinks when they party?

Jean-Pierre rings in. Jean-Pierre?

Jean-Pierre:

Zero.
Crowd seems offended by this from foreigner

Chet:

Oh, sorry, not correct. Julie or Steve?

Chet:

Julie?

Julie:

Six out of ten?

Chet:

Correct. Next Question: How many times a week do most MSU students drink?

76

Steve rings in. Steve?

Steve:

Six?

Crowd seems more agitated.

Incorrect. *Julie rings in.* Julie?

Julie:
rings in

One.

Chet:

Correct.

Final question: Approximately what percentage of MSU students drink moderately or not at all
(e. on Halloween
(f. on Football Game Saturdays
(g. during Spring break
(h. on St. Patrick's day

Jean-Pierre:
rings in

Zero.

Crowd starts booing Jean-Pierre's insult.

Again, incorrect. *Julie rings in.* Julie.

Julie:

(e. 80%
(f. 80%
(g. 70%
(h. 80%

Chet:

Correct again! Stay tuned in to College Quiz Show, for the lightning round, and remember Spartans watch out for Spartans.

goto "card"

Announcer:

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