

Anti-Drug Public Service Announcements:
Progress or Placebos?

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Table of Contents

Introduction..... 3

Avoiding the boomerang: Testing the relative effectiveness of antidrug public service announcements before a national campaign 4

Associations Between Message Features and Subjective Evaluations of the Sensation Value of Antidrug Public Service Announcements 9

Television campaigns and adolescent marijuana use: Tests of sensation seeking targeting 16

Adolescent processing of social and physical threat communications 22

Believability of Anti-Drug Advertising as a Function of Marijuana Usage Experience.. 30

Analysis..... 36

Conclusion 41

Bibliography 42

Introduction

The Partnership for a Drug-Free America (PDFA) is “a nonprofit coalition of communication, health, medical and educational professionals working to reduce illicit drug use and help people live healthy, drug-free lives.” (Partnership, 2005) The “research-based” campaigns implemented by PDFA involve information dissemination using radio, print, and internet methods, but one of the major components of their campaigns is done using televised public service announcements. (Ibid)

These campaigns and their designs have been evaluated by a number of studies. These studies have mostly concluded that these campaigns (or their equivalent) are effective and have also proposed design improvements to expand their reach and effectiveness. This paper will look at some of these studies and evaluate their reliability. Other studies will also be considered to serve as examples and extensions of those that have directly focused on media-based campaigns. Perceived realism of the messages, the social implications of drug use, and the “sensation value” of these messages will be evaluated and will ultimately prove that these campaigns are virtually ineffective in their goals. The findings of the studies reviewed will be shown to be conflicting and flawed in their methods and conclusions. Ultimately, it will be proven that an individual’s decision to use (or not use) drugs is just that, an individual decision. The presence of anti-drug advertisements may have an influence, but ultimately only serve the purpose of reinforcing pre-existing beliefs.

Avoiding the boomerang: Testing the relative effectiveness of antidrug public service announcements before a national campaign
by Martin Fishbein, Kathleen Hall-Jamieson, Eric Zimmer, Ina von Haefen, and Robin Nabi, 2002.

This study examined the “relative perceived effectiveness” of thirty anti-drug public service announcements and assessed the extent to which the effectiveness was related to perceptions of realism, knowledge gained from the PSA, as well as positive and negative emotional responses. A non-drug-related television program was used as the control. Sixteen of the PSAs in this study were reported to be significantly more effective than the control and six were rated to be significantly less effective. The reported effectiveness of the messages was found to be highly related to the realism of, the amount learned from, and the positive and negative emotional responses to the message.

(Fishbein, 2002)

Design

This study used a sample of 3,608 students in three middle schools and seven high schools from four states. Three of the schools were in rural areas and seven were in urban environments, though some of the urban schools drew students from suburban areas. The sample was almost evenly divided between male and female with 50.8% and 49.20%, respectively. The median age was fifteen and included a racial diversity of 49.1% white, 31.5% African American, 6.4% Hispanic, 4.4% Native American, 3.1% Asian/Pacific Islander, and 5.5% who were “other,” of mixed heritage, or did not report their ethnicity. (Ibid) Overall, the study seemed to make a concerted attempt for a representative sample of the general adolescent population.

The study involved five experimental conditions and one control condition. Each experimental condition consisted of six anti-drug public service announcements produced by the Partnership for a Drug-Free America. Three of the experimental conditions consisted of advertisements that focused primarily on the negative consequences of drug use. One of these conditions included marijuana and inhalant use, while the other two focused on the use of methamphetamines and heroin. The other two experimental conditions focused on “avoidance behavior.” One condition addresses the issues of “efficacy and esteem” and the other suggested the viewer “just say no.” The control condition was a single 24-minute public television program on the techniques of video and news production. This program included vague references to drugs: mentioning, in passing, perceptions of drug use among adolescents and having the word “crack” spray-painted on a wall in the background of a scene. (Ibid)

The testing was done in a classroom setting and was administered by a teacher. The materials were standardized across conditions, with instructions presented on videotape. Confidentiality and anonymity were emphasized both in written and audio-video form. (Ibid) Overall, the experiment seemed to be conducted at a relatively high standard of quality, with a minimization of possible bias.

The questions asked after each of the PSA’s related to the subjects’ perceptions of “realism” in the message, their emotional reactions to it, and their beliefs that viewing the message would help them and their friends avoid drug use. The questions were rated on a four-point scale ranging from definitely yes to definitely no, except for the question concerning the amount learned which ranged from “nothing at all” to “a great deal” on a three-point scale. (Ibid)

Results

The results of this study found that sixteen of the public service announcements were perceived to be significantly more effective than the control and six were perceived to be significantly less effective than the control. After viewing these six messages, many adolescents actually reported that they, and their friends, would be more likely to use drugs. The other eight PSA's did not differ significantly from the control. (Ibid)

The study found that the messages targeted at methamphetamines and heroin were the most effective and that those targeted at marijuana were the least effective. The most effective messages were those that outlined the negative consequences of drug use, while the least effective were those that advocated the avoidance strategy of “just say no.” A section of the results can be seen below. (Ibid)

TABLE 4—Factors Related to the Perceived Relative Effectiveness of Individual Public Service Announcements (PSAs) and Sets of PSAs: Correlations Using the PSA and the Respondent as the Unit of Analysis

	PSA Effectiveness (n=30)	Effectiveness of Set (n=3608)
Realism	0.87	0.77
Learning	0.88	0.43
Negative emotion	0.87	0.29
Positive emotion	-0.35 (<i>P</i> =.06)	0.08
Heroin/methamphetamine	0.77	NA
Marijuana	-0.53	NA
Drug not specified	-0.23 (NS)	NA
Dramatic representation	0.38	NA
Negative outcomes	0.48	NA
“Just say no”	-0.29 (NS)	NA
Perceived danger	NA	0.12
Perceived harmfulness	NA	0.25
Perceived norms	NA	-0.13

Note. NA = not applicable; NS = not significant. Unless otherwise marked, all correlations are significant (*P*<.01).

As previously mentioned, messages containing negative outcomes of drugs and those concerning heroin/methamphetamine were found to be significantly effective, while those concerning marijuana and messages of “just say no” were significantly ineffective.

The main points of note from this table should be the high relationship between realism, learning, and negative emotion evoked from the advertisement. This study has shown that realism, including honesty, is important when persuading adolescents to act, or not act, in a certain way. It is also important to present a message that can be learned from and to evoke a negative emotional response (for example, to portray drug use as disgusting or aesthetically displeasing).

Discussion

Though the results seem to be clear, their implications are far from lucid. The discussion in this study addresses many of the weaknesses in this study as well as in public service announcements in general, and will hereby be expanded upon. These include the difficulty in changing personal perceptions, the relationship between intended use and risk assessment and societal expectations, the skewed viewing population of the advertisements, and the lack of a measure of “true” effectiveness.

The first assertion in the discussion is that of the difference in perceived effectiveness between PSA’s directed at marijuana and those directed towards methamphetamine and heroin use. This study presented the concept that it may be harder to change adolescent’s attitudes, beliefs, and intentions regarding the use of marijuana as opposed to the use of “harder drugs,” such as heroin. (Ibid) Another explanation could be a greater scope of experience with marijuana in adolescents. Those who use marijuana and have been exposed to it may have a more positive attitude towards its use. The same argument could be made for methamphetamines and heroin, but the incidence of use is generally lower.

This leads to another point made in this study's discussion: that the public service announcements are perceived as effective because those who reported an aversion to drug use after viewing the ad may have already had a negative view of drug usage. The importance of this concept cannot be understated. If an anti-drug PSA is shown to be effective in those who would not otherwise use drugs, can it still be considered effective? This study included no measure of actual drug use, nor did it include a pretest on the individuals' sentiments towards drugs prior to viewing the PSAs, so changes in the subjects' perceptions of drugs were not measured.

As the study did not include reports on drug usage or previous perceptions of drug use, it is impossible to accurately determine the amount of persons who were actually persuaded by the message. It is also impossible to determine the "true" effectiveness of the PSA's. That is, this study only measured the subjects' views on drugs immediately after they viewed the advertisements. Actual drug use was not evaluated and the lasting effectiveness of the message was not investigated.

This issue of personal views was addressed in some of the findings of the study, mainly that effectiveness of each set of announcements was significantly related to the individuals' perceptions of harm, danger, and social norms. (Ibid) Therefore, if an individual perceives harm or danger to come from drug use, they should be less likely to use drugs. The issue here is that PSA's provide a potential harm or danger, while actual experience gives the individual proof of the real harms and dangers. Therefore, a threat may only be effective if real harm is actually expected or proven to be material.

The finding of effectiveness in relation to perceived norms is also notable. The results in this case found a negative correlation between the effectiveness of the PSA's

and perceived norms. (Ibid) This means that a significant number of adolescents' in this study reported that they or their friends were involved in drug use or were expected to be involved in drug use. The importance of this, too, cannot be understated. An expectation of behavior is important when an individual considers his or her actual behavior. Though these PSA's provided the individuals with a behavioral expectation, the expectations of and from their peers seem to have diverged from this message.

This study recommended that only public service announcements proven to be effective should be televised. The contention here is whether or not these PSA's were actually proven to be effective. A more in-depth study should have been performed to assess the "true" effectiveness of anti-drug public service announcements. Given the various issues considered in the discussion of this study, it is arguable whether or not these messages could ever truly be found effective. (Ibid)

Associations Between Message Features and Subjective Evaluations of the Sensation Value of Antidrug Public Service Announcements

by Susan E. Morgan, Phillip Palmgreen, Michael T. Stephenson, Rick H. Hoyle, and Elizabeth P. Lorch, 2003.

The next study to be considered was based on the belief that the "effective targeting" of "high-sensation seeking" adolescents requires the creation of "high sensation value messages." (Morgan et al, 2003: p. 512) The objectives in this study were to "identify message design features that would aid in the development of effective prevention messages targeting high-sensation seekers; develop an objective measure of message sensation value based on formal and content features of messages; and to determine whether high message sensation value messages were associated with higher

subjective evaluations of message sensation value.” (Ibid: p. 512) The study concluded that the presence of “certain message sensation value features” contributed significantly to the perceived message sensation value of the public service announcements studied, especially unusual and intense images, sound saturation, and unexpected formats and endings. Though this study does not directly investigate the effects of anti-drug public service announcements, its findings are intended to be the basis for the development of new PSAs. (Ibid: p. 523)

According to this study, messages high in “sensation value” are characteristically “novel, creative, exciting, intense, dramatic, or fast-paced.” (Ibid: p. 513) These messages are targeted towards “high sensation seekers” (HSS), who “maintain a need for novel, complex, ambiguous, and emotionally intense stimuli” and who are more willing to take risks to involve themselves in experiences that satisfy this need. This higher willingness is evaluated as compared to their “low-sensation seeking” (LSS) counterparts. This “drive for thrill” supposedly leads these individuals to engage in riskier health behavior, such as drug use. This study reported results from Donahew (1988), which stated that junior high HSS are four times more likely to use marijuana as LSS and senior high HSS are three times more likely to use marijuana. (Ibid)

Theories

One theory that is used as guide in this research is the activation model of information exposure, which states that attention is primarily a function of an individual’s level of need for stimulation. This theory was developed by Donohew, Palmgreen, and Duncan (1980). The activation theory maintains that individuals have an “optimum level of activation or arousal” at which they feel most comfortable. Individuals expect to

achieve this optimum level when entering into “information exchange.” However, if this level is not reached, then individuals are likely to seek another source of stimulation, hoping to achieve that state. The activation theory’s application to sensation seeking and message sensation value is found in the need to attract and hold the attention of high sensation seekers and the attainment of this through messages with a “high sensation value.” (Ibid, 514)

The other theory behind this study is the limited capacity model of information processing as developing by Lang (1990). This theory proposes that television viewers have a “limited cognitive ability” to select, store, and retrieve the information gained from televised stimuli. This theory contends that attention to televised stimuli is both a conscious and unconscious decision. Though viewers can physically control what they watch and the amount of attention paid to a particular message, structural features (such as cuts, edits, and effects) and content features may trigger “unconscious attentional processes.” In the present context, message with “high sensation values” may cause the viewer to unknowingly absorb the information and therefore be less prone to use drugs.. (Ibid, 515)

This study proposes that there is a difference between the actual message sensation value and the perceived message sensation value. The actual message sensation value is based on various features of the messages, while the perceived message sensation value is the individual’s response to these message features. The different attributes of message sensation value are the formal or structural video dimension (including cuts, edits, and visual special effects); the formal audio dimension (including auditory special effects and music); and the content dimension (including the use of narrative, the

violation of norms, and the use of a surprise ending). A message is said to be the highest in sensation value when a number of these dimensions are included. (Ibid, 516)

Design

The present study was conducted using 418 undergraduates enrolled in psychology and communications classes at a large university, who received extra credit or course credit for their participation. The respondents completed a sensation-seeking scale and a survey of demographic information. The respondents were then shown ten public service announcements that were randomly selected from a pool of 109 and asked to complete a scale designed to measure subjective perceptions of the PSAs for each advertisement viewed. The perceived message sensation value for each public service announcement was then determined by averaging the values given by all of the respondents that viewed it. (Ibid, 520)

The average perceived sensation value of each message was then compared to the “actual” message sensation value. These values were previously determined using a scoring system that included the visual features, audio features, and content. The comparison between the total message sensation value and the perceived sensation value found a strong correlation between the two. The results of individual comparisons of content features are shown in the table on the next page. (Ibid)

Table 2. Correlations Between Message Features of Message Sensation Value and PMSV

	Novelty	Emotional arousal	Dramatic impact	PMSV total
Cuts/edits	.16	.26**	.07	.16
Visual effects	.21*	.22**	.11	.19*
Unusual images	.25**	.29**	.15	.25**
Intense images	.35**	.28**	.42***	.37***
Sound saturation	.36***	.35***	.32***	.35***
Music	.00	.03	-.10	-.01
Sound effects	.23*	.26**	.26**	.26**
Acted out	.31**	.31***	.32***	.33***
Unexpected format	.47***	.41***	.37***	.46***
Surprise/twist ending	.30***	.30***	.32***	.32***
Slow motion	.17	.23*	.13	.18
MSV total score	.45***	.48***	.38***	.46***

Note. Probability values are two-tailed.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Results

Overall correlations between message sensation value and the perceived sensation value were highest when intense images, sound saturation, unexpected format and a surprise or twist ending was used, as well as when the message was acted out in the first person. Other significant correlations came from visual effects, unusual images, and sound effects used. Cuts or edits and the use of slow motion were found to be insignificant and the use of music was found to be almost negligible. (Ibid, 521)

Discussion

The discussion in this study states that structural and content features of high sensation value message were identified; that an objective measure of message sensation value was established; and that this objective measure was demonstrated to correlate with perceived message sensation value. (Ibid) However, it may be contended that none of these goals were actually reached. There are many flaws in this study that must be discussed before making an accurate evaluation of its findings.

First, the sample consisted of undergraduate students enrolled in psychology and communications classes, who received some form of credit for their participation. (Ibid) The rationale behind this choice of sample was not discussed in this study. It seems that a study exploring the sensation value of anti-drug messages, which are typically aimed at younger persons, would use the perceptions of a sample of this population. The contention here is the representability of the study. College students enrolled in psychology and communications classes (and who received some form of credit) are likely to have different views of message sensation than the typical intended audience of these public service announcements. These students have most likely learned about theories and practices of mass communications and used this knowledge to evaluate the messages.

Though the aim of the study was to develop an objective measure of message sensation value, the concept of such a measure is somewhat paradoxical. By definition, sensation is an “observation by the senses” or the “faculty of perceiving by the senses.” (Oxford Dictionary) Thus, sensation is a reaction to stimuli. As each person senses stimuli differently and reacts to those sensations differently, an objective measure of the overall sensation value of a particular feature of a message seems virtually impossible. The basis of sensation is perception. Therefore, the perceived sensation value of a message is the determining factor in an individual’s decision to accept or reject its content. A general or “average” reaction to certain stimuli could be measured, but these results should not be considered to be objective.

This leads to an examination of the theoretical perspective of the limited capacity model of information processing, upon which the study was partly based. This theory

assumed that viewers have a “limited cognitive ability” to select and store information contained in televised stimuli and that this decision was both conscious and unconscious. This theory contends that an agreement and satisfaction with the message is as important, if not less, as the format and structure of the message’s presentation. (Morgan et al, 2003)

This theory seems to propose that one could unconsciously develop a belief in the message offered if it is presented in a way that diverts attention from its content. Though this *might* be true in very small children, it would seem that the rest of the population would not “subconsciously” adopt a position, even if it were presented in a “novel way.” This should be especially true when considering anti-drug PSAs as viewed by a person that has used drugs.

Finally, this study did not measure the impact that these messages had on the respondents’ views of drugs. Though the object of this study was not to measure the effectiveness of the messages presented, the presumption made was that messages high in sensation value are effective in deterring drug use. (Ibid) This assumption could have been tested roughly by adding an additional set of questions concerning a change in attitude after viewing each message. Though the sample may not have been ideal, the results could have been used, at the very least, as an indication of the validity of this point.

This study attempted to rely on the subjective evaluations of the sensation value of anti-drug public service announcements to develop an objective measure of sensation from those results. However, the sample, the execution, the theories, and the assumptions used in this study were flawed. This study attempted to remove the person from the sensation, but did not realize the intrinsic link between the two. As for the concept of

high-sensation seeking individuals that was presented in this study, its validity will be examined in the next study.

Television campaigns and adolescent marijuana use: Tests of sensation seeking targeting by Phillip Palmgreen, Lewis Donahew, Elizabeth Puzles Lorch, Rick H. Hoyle, Michael T. Stephenson, 2001.

This study intended to evaluate the effectiveness of “targeted televised public service announcement campaigns” in reducing marijuana use among “high-sensation seeking” adolescents. The study used a “controlled interrupted time-series design” in two matched communities. Two televised anti-marijuana campaigns were conducted in one county and one campaign was conducted in the comparison community. The results of this study reported that all three campaigns reversed “upward developmental trends” in thirty-day marijuana use among “high-sensation seekers.” “Low-sensation seekers” were found to have low levels of drug usage and no significant effects from the campaigns were found. (Palmgreen et al, 2001)

Theory

This study was based around a “potent drug use risk factor,” which was called “sensation seeking.” The theory is that “sensation seeking is a personality trait associated with the need for novel, complex, ambiguous, and emotionally intense stimuli and the willingness to take risks to obtain such stimulations.” (Palmgreen et al, 2001: p. 292) Those persons who are “high-sensation seekers” rank “high” in their tendency to seek sensation, which puts them at a higher risk for the use of a variety of drugs as well as an earlier onset of use (relative to their “low-sensation seeking” counterparts). An implication of this “personality trait” presented in this study is that messages with a

“high-sensation-value” are more effective in satisfying the needs of “high-sensation seekers” for stimulation. Such messages would be “novel, dramatic, emotionally powerful or physically arousing, graphic or explicit, unconventional, fast-paced, or suspenseful.” (Ibid)

Design

The data for this study were gathered from 100 randomly-selected public school students from Fayette County, Kentucky and Knox County, Tennessee. Each student was individually interviewed and a new random sample was gathered each month. The interviews were conducted beginning eight months before the first campaign in 1997 and ending eight months after the 1998 campaigns ended. These interviews assessed television viewing and exposure to the public service announcements, attitudes toward and use of marijuana and other substances, as well as various risk and protective factors, particularly “sensation-seeking.” According to the study, as the subjects’ aged, marijuana use tended to increase as a result of “sociodevelopmental factors” and that, as this trend was reflected in both counties, each county served as a control for the other.

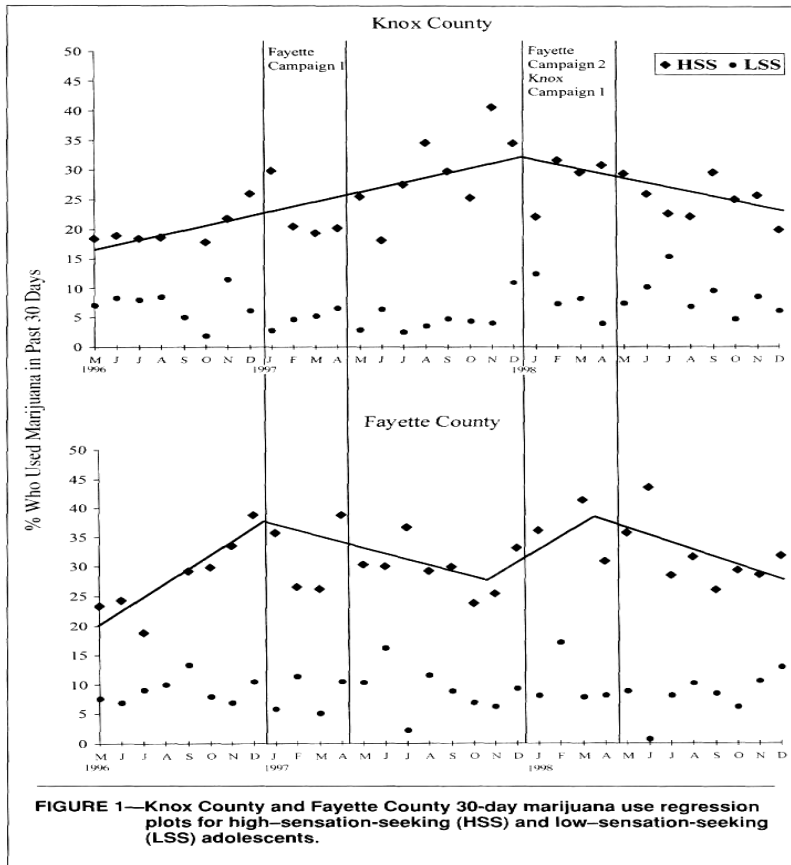
The two counties matched closely in basic demographics. The samples also did not differ significantly in the measured level of “sensation seeking.” Fayette County was significantly higher in other drug “risk factors” (such as perceived peer and family drug use) and significantly lower on most “protective factors” (such as religiosity and perceived sanctions for marijuana use). Fayette County students also showed significantly higher levels of marijuana use as well as use of alcohol, tobacco, and hallucinogens, where Knox County students showed a greater use of inhalants. Yet,

according to the study, both counties were consistent with the national norms reported by the University of Michigan's Annual Monitoring the Future Study. (Ibid)

In order to implement the media campaigns, a media buyer purchased time from local television stations and companies, who also donated "substantial" public service announcement time. Spots were placed in programs that were reported to be watched by "high-sensation seeking" adolescents. According to standard advertising formulas calculated by this study, at least 70% of the targeted age group was exposed to a minimum of three campaign advertisements per week. Data from the monthly surveys indicated even higher exposure, particularly among "high-sensation seekers." (Ibid)

"Sensation-seeking" was measured with a scale that included eight statements to which the respondent indicated the extent of his or her agreement on a five-point scale. An example of these questions were "I prefer friends who are excitingly unpredictable" and "I like wild parties." According to this study, the scale showed "good reliability" and predicted drug use, drug attitudes, and various drug risk and protective factors. (Ibid)

Results



The results, as seen above, reported in the study report that in Knox County, “high-sensation seekers” showed an upward developmental trend in 30-day marijuana use of 0.84% per month for a pre-campaign increase in use from 16.6% to 33.0%. There was a significant downward change in slope immediately after the start of the campaign, with the decline in use continuing to the completion of data gathering. (Ibid)

In Fayette County, a downward change in slope at the start of the first campaign was significant; however, the effect of this campaign appeared to “wear off” after approximately six months, with a significant shift to the upward slope. The downward slope that occurred during the second was also considered to be significant. The discussion in this study asserted that media campaigns alone could have significant

effects on public health behaviors. Though it was stated that media campaigns should be coupled with other methods of education and intervention to produce the “best” results, it was alleged that “carefully targeted campaigns that achieve high levels of reach and frequency and with messages designed specifically for the target audience...can play an important role in future drug prevention” (Ibid)

Discussion

This study appears to have shown the efficacy of anti-drug public service announcements. However, there seem to be flaws in the collection, representation, and evaluation of the data. The data collected may have shown a correlation, but has failed to show causation.

First, the environment is not considered or discussed in this study. The availability of marijuana could have declined during time periods consistent with the public service announcements. This suggestion is not unreasonable as communities concerned with drug usage may also implement other methods of prevention, such as an increased police focus on drugs.

The next issue is the increase prior to and during the second campaign in Fayette County. The study suggested that the model used to portray the data may have been flawed. Another consideration could be that the so-called “high-sensation seekers” were less satisfied with the anti-drug message and sought other means of “high-sensation.” In fact, it would seem logical that those who are the most demanding of novel and unique stimuli would not be responsive to the constant repetition of a message, especially one that negatively portrays behavior in which they are supposedly inclined to engage.

This leads to a consideration of the concept of “sensation seeking” itself. According to this study, “sensation seeking is a personality trait associated with the need for novel, complex, ambiguous, and emotionally intense stimuli and the willingness to take risks to obtain such stimulation.” (Ibid) On first glance of this definition, one may believe this to be a description of someone who is creative and has a desire to be challenged. Usually, these characteristics have positive connotations, but in this context have been used as characteristics of drug users.

The evaluation of a person’s “sensation seeking” level seems to be subjective at best. By asking only eight questions, such as “I prefer friends who are excitingly unpredictable,” it should be difficult to determine the actual level of “sensation seeking” that the person exhibits. In asking for a level of agreement to a statement such as “I like wild parties,” an inclination toward drug use seems to be implicit to “high-sensation seekers.” Considering that these people seek “*high* sensations,” the label seems to be a different designation for someone believed to have an inclination toward drug use. (Ibid)

In addition, the converse of a “high-sensation seeker”, the “low-sensation seeker,” seems to be unnatural. It would seem reasonable to assume that most people attempt to experience the highest level of sensation possible. The general nature of humanity is to maximize pleasure and minimize pain. A “low-sensation seeker” seems to fall in the middle by pursuing only moderate pleasure.

Finally, the results from the study show that levels of marijuana use in both counties at the end of the study are higher than those at the beginning of the study. The rise in marijuana use was noticeably higher in Fayette County, which had experienced two campaigns of anti-drug PSAs. The increase in use was attributed to

“sociodevelopmental factors,” though these factors were never specifically addressed. In the end, the campaigns either failed to prevent this percentage of adolescents from using marijuana or failed to discourage them from continuing use. Either way, there is a portion of the sample population who did not smoke marijuana in the beginning of the study, but reported use after at least one media campaign. (Ibid) It seems disturbing that the results purport that the media campaigns were effective, when drug use actually increased.

Attributing this increase to “sociodevelopmental factors” is no grounds for its dismissal. In fact, the goal of the public service announcements should be to overcome these factors.

This study attempted to prove that “high-sensation seekers” respond to anti-drug public service announcements containing “high-sensation” stimuli. The study did prove a correlation between the presence of an anti-drug media campaign and a decrease in marijuana use. However, a causal connection was not proven nor were steps taken towards eliminating a casual connection.

Adolescent processing of social and physical threat communications
by Denise D. Schoenbachler and Tommy E. Whittler, 1996.

The next study to be considered is that of Denise Schoenbachler and Tommy Whittler. Though this study did not deal with televised anti-drug public service announcements, it did raise a multitude of issues dealing with their design and effectiveness. This study examined 371 adolescents’ reactions to physical and social threat appeals in drug prevention public service announcements. Sensation seeking was also included in this study, which was asserted to be an important variable in moderating the subjects’ responses to threat communications. The design for this study was based on the findings of many others concerning threat communications. (Schoenbachler, 1996)

Theories

One of the major studies considered in this one was that of Tanner, Hunt, and Eppright (1991) concerning threat communications to college students about sexually transmitted diseases (STD's). This study found support for a model that emphasized the effects of emotion, social implications of responses, and prior knowledge in the individual's response to threat communications. The present study differentiated between the threats of sexually transmitted diseases and the threat of drug use as the suggested response to STD's is to adopt a certain "coping response", such as using a condom, where the suggested response to drug use is inaction, that is, to not use drugs. (Ibid)

In the Tanner et al. study, the researchers found that the social context of a coping response influences the effectiveness of a threat communication. This means that the possible responses to a "threat" may have social implications that influence the response chosen. The adolescent may be inclined to select a response that results in the "most socially acceptable outcome," rather than a response that minimizes the threat presented. This is an important point as it suggests the importance of environment in the choice to use drugs. If using drugs is the response that gains the individual the most acceptance by his peers (or any particularly influential group), his actions may reflect his potential acceptance regardless of the threats presented. (Ibid)

Another finding from Tanner et al. was that an individual's coping response may be based on prior experience or knowledge rather than the communication itself. It was proposed that individuals may have a certain "repertoire" of coping responses that can be substituted for the coping response presented in a threat communication. The application

of this in the present context may prove that a person's response to anti-drug public service announcements is based on prior experience with drugs. If a person has used drugs and found none of the consequences presented to them to be true, they may follow their personal experience and diverge from the suggestions of others. Even if a person has not used drugs, their vantage point may be formed by knowledge of other persons' drug use. If people they respect or aspire to be like use drugs, they may be inclined to follow that person's path (or opinion) as it is a more tangible source of information. This example also reflects on the aforementioned issue of environment and seeking a socially-acceptable response. (Ibid)

Another set of findings upon which the present study was based was taken from Rogers (1975). Rogers suggested that coping responses are defined as either adaptive or maladaptive. Adaptive responses lead to behavior that minimizes both the threat presented and the danger. In the anti-drug context, an adaptive response would be to abstain from all drug use. On the other hand, a maladaptive response minimizes the threat without minimizing the danger. (Ibid) In the anti-drug context, a maladaptive response could be to only smoke marijuana or only using drugs from a well-known source.

Tanner et al. furthered Rogers' threat appeal research by including the role of social context. The proposal was that responses to threat communication are evaluated in terms of their social implications. Even where fear is aroused and an "adaptive coping response" is presented, the social implications of that response could affect attitude and future behavior. The social implication in the research of Tanner et al. is that wearing a condom may imply that one partner or the other has a sexually transmitted disease. In the anti-drug context, by not using drugs, the implication may be that drugs are unacceptable

to a productive life (as presented by adults). The importance of this is that the adaptive response suggested is not necessarily given by one's peers, but by his elders. This differentiation is important because a "maladaptive" response may be socially acceptable in the realm of the adolescent's peers.

Another aspect that was considered in this study was "sensation seeking," which has already been discussed. The application of this concept in the present study is in its evocation of an emotional response of the "high-sensation seeking" viewer of either intrigue or dismissal. This study evaluated sensation-seeking under the hypothesis that adolescents "high" in "sensation seeking" levels experience lower levels of emotion (such as fear, guilt, and shame) than those "low" in sensation seeking, and that "high-sensation seekers" would have a stronger negative attitude towards threat communications, a more positive attitude toward drug use, and a stronger intention to use drugs. (Ibid)

Two final components of this study's design involved "adolescent egocentrism." According to a study by Elkind (1967), adolescence is a time of dramatic change in cognitive processing. This study suggests that adolescents fail to differentiate their own thoughts from the thoughts of others. This can lead to the development of two "cognitive constructions": the imaginary audience and the personal fable. (Ibid)

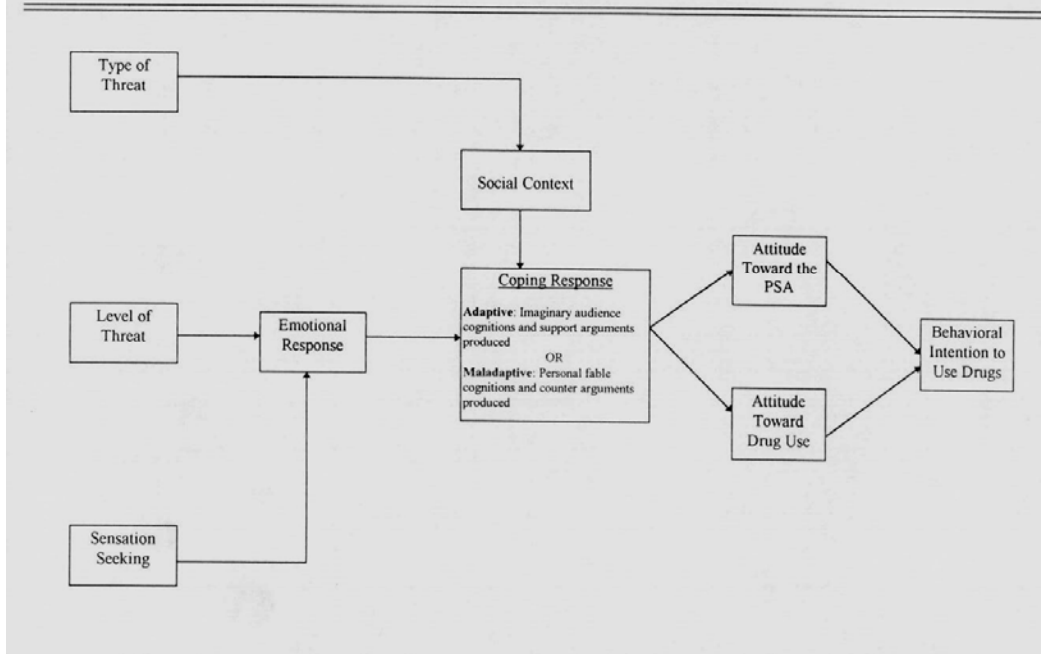
The imaginary audience is considered in actual or highly plausible social situations, when the adolescent tries to predict the reactions of other people to his or her own actions. These predictions, however, are based on the assumption that others are as critical of the individual as he or she is of himself or herself. The adolescent believes that he or she is the center of attention and that the rest of the world is his or her audience,

judging his or her every move. The implications of the imaginary audience have mostly been discussed in consideration of the social implications when choosing threat responses. Once again, the environment and, more importantly, the individual's perception of the environment play an important role in decision making. (Ibid)

The other "cognitive construction," the personal fable, is created when an adolescent fails to differentiate between ideas that are unique and ideas that are universal in a "particular construction." The adolescent considers himself or herself "so special and so unique" that bad things only happen to others and not to themselves. This concept of adolescents feeling virtually "immortal" is not new. In this context, one may believe that the negative consequences of drug use will not happen to him or her, even though they have happened to others. This perception may lead to irresponsible or unexamined drug use. (Ibid)

Figure 1 from the present study is shown on the next page. This is the proposed model of anti-drug threat messages and adolescent response. This model considers the social context of drug use as well as the emotional response by the individual when selecting a coping response. This response is then influenced by the individual's attitude towards the public service announcement and his or her overall attitude toward drug use. (Ibid)

Figure 1
Proposed Model of Antidrug Threat Messages and Adolescent Response



Design

The actual experiment in this study was performed on 371 seventh and eighth grade students in a metropolitan middle school. Each student was asked to look at a print anti-drug public service announcement and then asked to list his or her thoughts on it. There were two basic public service announcements: one showing a physical threat and one showing a social threat. Each basic announcement was then slightly altered to manipulate the intensity of the threat to low, medium, and high. Therefore, six public service announcements were used in this study: high physical threat, medium physical threat, low physical threat, high social threat, medium social threat, and low social threat. (Ibid)

This study also measured subjects' need for sensation, the emotional response to the PSA, the cognitive response to the PSA, the individual's personal fable orientation,

the individual's imaginary audience, his or her attitude toward the PSA, his or her attitude toward drug use, and his or her "behavioral intention" to use drugs. (Ibid)

Results

This study found that the significant effectiveness variables were the attitude toward the public service announcement, the individual's attitude toward drug use, and the behavioral intention to use drugs. In addition, the study found that subject's attitudes toward drug use were more negative after a social threat message than after a physical threat message. Also, the subjects that received the social threat message were reportedly less likely to ever use drugs.

According to the study, the significant effects on the "persuasion variables" supported the importance of sensation seeking as a variable affecting the individual's response. "High sensation seekers" had more negative attitudes toward the public service announcements, had more positive attitudes towards drug use, and indicated a stronger likelihood of using drugs in the next week, the next month, and ever than "low sensation seekers." However, the emotional responses to the messages between "high" and "low" sensation seekers did not differ significantly. These results are presented in the table on the next page. (Ibid)

Table 5
Source of Coping Response: Sensation Seeking Main Effects

Dependent Variable	Mean (High SS)	Mean (Low SS)	F	Ω^2
Emotional response	2.01	1.97	.88	—
Counter arguments	.85	.44	16.10*	.03
Support arguments	1.90	2.51	12.34*	.03
Attitude/PSA	2.56	2.49	2.86	
Attitude/drug use	4.02	4.72	29.14*	.07
Behavioral intention, week	1.15	1.72	16.24	.04
Behavioral intention, month	2.21	1.48	16.03*	.04
Behavioral intention, ever	2.93	2.01	15.10*	.04

*Significant at $p < .05$.

The predicted difference in coping responses in terms of the concepts of imaginary audience and personal fable were not supported. Social threats did not lead to more imaginary audience responses and the physical threats did not increase personal fable coping responses. Though it was contended that these concepts may not have been measured accurately, this study used an evaluation based on the work of Elkind that presented these concepts. (Ibid)

The study also found that there was no positive relationship between the level of threat and the level of emotional arousal from the message. That is, there was no significant difference found in emotional level in response to a low, medium, or high intensity level of threat. (Ibid)

Discussion

In my view, this study has proven that environment is the most important factor when an individual considers drug use. A social threat evoked a response that was more favorable to the aims of the message. Those who are considered “prone” to drug use were found to have more favorable opinions of drugs. The level of threat was also found to be

irrelevant when an individual considered drug use. (Ibid) It may therefore be concluded that an individual's decision to use drugs is based on the consequences that it has on his or her environmental situation and on the knowledge he or she has gained from personal experience.

One of the limitations of this study is that it did not include any measure of actual drug usage. As this study was designed to determine reactions to threat communications by certain groups and not the actual effectiveness of these messages, it is understandable that actual drug usage was not included. Yet, the eventual decision of an individual to use drugs may differ from his or her reported or current point of view.

Believability of Anti-Drug Advertising as a Function of Marijuana Usage Experience
by Sandra C. Jones and John R. Rossiter, 2001.

The last study to be considered was purported to help address the increased incidence of marijuana use in Australia. The suggestion is that information dissemination is likely to become the main vehicle for minimizing the harms associated with marijuana use. As a result, there is a need for the development of "informative and convincing" communication strategies that target both potential and "incipient" marijuana users. However, the Australian government's "zero tolerance" view of drug use may be accompanied with messages that lack credibility with people who already use, or have previously used, marijuana. (Jones et al, 2001)

Theory

This study is based on the cognitive dissonance theory developed by Festinger (1957). According to this theory, there is a tendency for individuals to seek consistency

among their “cognitions” (i.e. their beliefs and attitudes). Where there is an inconsistency between attitudes and behaviors, a change must be made to remove the dissonance. In the case of attitude and behavior, it is believed that attitude is most likely to change to accommodate a certain behavior. The present implication of this is that people who use marijuana may find information about marijuana less believable than those who are not “users,” and that those who use marijuana may also have a greater degree of mistrust in information concerning other drugs, with which they may have no experience. (Jones, 2001)

Design

The study was conducted on 76 Australian undergraduate students. Messages concerning the consequences of drug use were presented to the subjects and they were asking to rate the likelihood of each consequence on a four-point scale ranging from “not at all likely” to “very likely.” The messages used were taken verbatim from an American Council for Drug Education publication. The only change was the deletion of the word “crack” from materials on cocaine as the incidence of crack usage is very low in Australia. The experimental condition included fifteen statements about marijuana, twelve about cocaine, and fourteen about heroin. An emphasis was placed on the response of the individual to be that of their own opinion. Data was also gathered concerning previous and current use of marijuana and any use of cocaine and heroin. (Ibid).

One hypothesis in this study was that current users of marijuana would rate the messages on the negative consequences of marijuana as less believable than ex-marijuana users and those who have never used marijuana. The other hypothesis was that current

users of marijuana would rate the messages on the negative effects of cocaine and heroin as less believable than ex-marijuana users and those who never used marijuana. (Ibid)

Results

The results of this study found 12% of the sample to be current marijuana users, 25% to be former marijuana users, and 63% of the sample to be complete non-users. Eight of the subjects reported cocaine use as some point and two of the subjects reported heroin use at some point. (Ibid: p. 2)

Overall, the messages appeared to be reasonably credible to the students. The mean rating for nine of the items was “quite likely” to “very likely” and none of the items were rated as “not at all likely.” A composite measure showed that marijuana messages were generally rated as “quite likely.” The mean reported likelihood of the ratings showed that current users rated the messages as the least likely, followed by those who never used marijuana, and those who previously used marijuana. The results from the study can be seen on the next page. (Ibid: p. 3)

Table 1: Believability of marijuana messages by user status

	Never N = 48	Ex N = 19	Current N = 9	Total N = 76	F
IMMEDIATE EFFECTS					
Increased heart rate	3.0	3.2	2.6	3.0	1.69
Anxiety, paranoia	2.9	3.3	2.8	3.0	2.25
Hallucinations	3.1	2.9	2.4	3.0	2.55
Impaired perception	3.2	3.4	3.0	3.2	1.46
Loss of concentration/coordination	3.4 ^a	3.6 ^b	2.7 ^{a,b}	3.4	7.66***
Impaired judgment	3.4 ^a	3.5 ^b	2.7 ^{a,b}	3.3	5.17**
Increased risk of accidents	3.5 ^a	3.0	2.4 ^a	3.3	7.40***
Diminished inhibitions	3.0	3.1	2.6	3.0	1.89
DELAYED EFFECTS					
Loss of motivation	3.0 ^a	3.6 ^a	3.2	3.2	3.77*
Diminished short term memory	3.2	3.6	3.0	3.3	2.78
Increased risk of AIDS/STD	2.5 ^a	2.3 ^b	1.2 ^{a,b}	2.3	6.28**
Damage to body systems	3.2	3.4	2.7	3.2	2.68
Increased risk of cancer	2.8	3.1 ^a	2.1 ^a	2.8	3.40*
Psychological dependency	2.9	3.0	2.3	2.9	2.79
Dependence & addiction	3.5	3.6	3.1	3.5	2.06
COMPOSITE SCORE	3.1 ^a	3.2 ^b	2.5 ^{a,b}	3.0	7.13***

Notes to Table 1:

1. Across rows, means which have the same superscript letter are different at $p < .05$.
2. Significance levels for the F statistics are: * $< .05$; ** $< .01$; *** $< .005$.

As shown above, the most significant differences in perceptions between marijuana users and non-users were found in response to loss off concentration and coordination and the increased risk of accidents. Highly significant results were found in response to impaired judgment and the increased risk of sexually transmitted diseases. Significant results were found in response to loss of motivation and the increased risk of cancer. (Ibid)

In the results concerning cocaine and heroin use, current marijuana users differed to a smaller degree than non-users. All subjects found the messages to be reasonably credible. The mean rating for cocaine was a 3.0 (“quite likely”) while the mean rating for heroin was slightly higher at 3.2. The significant results of the cocaine likelihood assessment between marijuana users and non-users were found in statements concerning

neurological incidents, increased risk of traumatic injury, sexual dysfunction, and promiscuous sexual activity. The significant differences in response to the heroin statements were itchy skin and skin infections; constricted pupils and poor night vision; nausea and vomiting; and constipation and loss of appetite. A more significant different in perception was found in marijuana users who reported a higher likelihood of searing, collapsed veins. Overall, marijuana users had a significantly lower response to message concerning cocaine. When considering statement concerning heroin, current marijuana users rated the likelihood of the consequences presented equally to those who had never used marijuana. Former marijuana users scored the statements on heroin higher than the other two groups. A table of the results can be seen below. (Ibid)

Table 2: Believability of cocaine and heroin messages (by marijuana usage status)

	Never N = 48	Ex N = 19	Current N = 9	Total N = 76	F
COCAINE					
Neurological incidents	3.1 ^a	3.0	2.4 ^a	3.0	3.20*
Inc. risk of traumatic injury	3.5	3.0	3.1	3.4	3.29*
Sexual dysfunction	2.6 ^a	2.9 ^b	1.8 ^{a,b}	2.6	4.76*
Promiscuous sexual activity	3.0	3.2 ^a	2.3 ^a	3.0	3.39*
Inc. risk of hepatitis, HIV etc	3.2	3.5	3.2	3.2	1.73
Cardiovascular problems	3.4	3.4	2.9	3.3	2.20
Pulmonary effects	3.0	2.9	2.3	2.9	2.57
Psychiatric complications	3.3	3.5	3.1	3.3	0.96
Sleeplessness	2.7	2.9	2.9	2.8	0.30
Diminished sense of smell	2.9	3.0	2.6	2.9	1.21
Nausea and headaches	3.0	3.1	2.6	3.0	1.28
Foetal cocaine effects	3.4	3.5	3.2	3.4	0.54
COMPOSITE SCORE	3.1	3.1	2.7	3.1	2.78

HEROIN					
Itchy skin, skin infections	2.2 ^a	2.9 ^a	2.2	2.4	3.63*
Constricted pupils, red. night vision	2.6 ^a	3.2 ^a	2.6	2.7	3.18*
Nausea and vomiting	3.0 ^a	3.5 ^a	3.1	3.1	3.50*
Constipation, loss of appetite	2.8 ^a	3.4 ^a	2.9	3.0	3.99*
Scarring, collapsed veins	3.2 ^{a,b}	3.7 ^a	3.9 ^b	3.4	5.38**
Menstrual irregularity	3.0	3.1	2.7	3.0	0.96
Reduced sex drive	2.7	3.1	2.7	2.8	1.54
Irregular blood pressure	3.2	3.6	3.2	3.3	2.92
Slow, irregular heartbeat	3.3	3.4	3.1	3.3	0.54
Fatigue, breathlessness	3.1	3.3	3.1	3.15	0.54
Injuries from activity	3.3	3.6	3.0	3.3	2.14
Dependence and addiction	3.6	3.8	3.7	3.7	1.11
Hepatitis, AIDS, STDs	3.4	3.6	3.7	3.5	0.53
Stroke or heart attack	3.3	3.4	3.1	3.3	0.50
Respiratory paralysis	3.6	3.6	3.0	3.5	2.70
COMPOSITE SCORE	3.1	3.4	3.1	3.2	3.02

Discussion

The discussion in this study stated that the results supported the hypothesis that marijuana use is associated with the reduced believability of anti-marijuana messages. However, the lack of proof of a causal relationship was admitted. That is, whether the decision to use drugs was based on a belief that marijuana is not harmful or whether marijuana is not believed to be harmful because the individual uses it. The former users' high believability of the negative consequences of marijuana suggests that the latter is true, but this cannot be stated with certainty without further study. (Ibid)

The discussion also proposed that the hypothesis that experience with one drug is associated with perceptions of others is valid. Those who formerly used marijuana reported the highest level of believability in the negative consequences of cocaine and heroin. Though marijuana users reported a lesser degree of belief in the negative consequences of cocaine, a significant difference was not found. Also, the difference in the perception of the heroin messages between users and non-users was virtually nonexistent. (Ibid)

The discussion also addressed some of the flaws in the design of the experiment, including the lack of adolescent subjects and “blue collar” subjects. The small sample size was also addressed. (Ibid) The disproportionate number of marijuana users, ex-users, and non-users should also be considered. In addition, those with prior experience with cocaine and heroin should have been excluded from the experiment to truly test the second hypothesis.

The fact that this study was conducted in Australia may compromise its applicability to media campaigns in the United States. Yet, as implied from the study, the Australian population has not been inundated with anti-drug public service announcements and the true effects of these announcements may be best analyzed on this population. (Ibid)

Though this study may have its design flaws, the theory surrounding it and its basic findings are valuable. The use of the cognitive dissonance theory in this context further supports for the argument that the audience that demonstrates the intended response of anti-drug messages (not using drugs) may not have been inclined to drug use initially. According to this theory, attitude is often likely to be altered to suit an individual’s behavior. (Ibid) Therefore, those who use drugs are likely to develop an attitude that rejects messages concerning the harmful effects of marijuana. Conversely, those who develop an attitude in accordance with these messages may not have exhibited or chosen not to exhibit the behavior of drug use.

Analysis

The research that was evaluated in this paper put forth a variety of theories and findings. The major points in evaluating the effectiveness of these messages, as procured

from these studies, were perceived realism, sensation value, environmental context, and cognitive dissonance. Each of these aspects will now be discussed further to explain the shortcomings of these messages and how there are conflicts in proposed designs and implementations of anti-drug media campaigns.

The first study considered was by Fishbein et al (2002). One conclusion from this study was that perceived realism was one of the most important aspects of an effective message. An accurate portrayal of drug use and its consequences seems to be influential in message approval by adolescents. This does not seem unreasonable as information that is seen as trustworthy is usually treated as such. However, there may be a conflict when “sensation seeking” is considered.

The studies of Morgan et al (2003), Palmgreen et al (2001), and Schoenbachler and Whittler (1996) focused, at least in part, on “high-sensation seekers.” As previously defined, these are people who are in constant pursuit of “high sensations” and are willing to take greater risks to achieve them. Because of this, it is said that “high sensation seekers” are more likely to use drugs and to begin use at an earlier age. (Morgan, 2003) As mentioned, this conclusion seems to be, in essence, a tautology. A “high-sensation seeker” is thought to be prone to drug use, but a drug user almost automatically falls into this category as he or she seeks a “high” sensation. The circular logic here is unmistakable.

The conflict with the notion of realism in anti-drug messages is that those messages that clearly and accurately portray drug use and its consequences may not have the highest “message sensation value.” According to Palmgreen et al (2001) and Morgan et al (2003), messages must be “sensational” to reach those who are most prone to drug

use. The very word “sensational” has a connotation of unreliability. Consider “sensationalism” in news reporting. In this context, “sensationalism” may evoke a picture of information that has been altered or represented in a way that may (or may not) be factually accurate. However, in its presentation, the information depicts a different impression than reality. For example, saying that all drugs users fund terrorist activities. In fact, there may be a segment of the population that would only respond to “extremely sensational messages.” These messages would probably depict events or actions that are highly improbable (if not impossible). Yet, in the view of Palmgreen et al (2001) and Morgan et al (2003), these persons are probably the most likely to be involved with drug use. Therefore, if drug use is initiated, the actual effect of the message on those individuals may be lost and, in fact, have the opposite effect than that which was intended. The consequences of this notion were explored in the study by Jones and Rossiter (2001).

This study, though containing its flaws, reported that current marijuana users are less likely to believe the anti-drug messages presented to them. An important note here is that the messages presented to those in this study were taken almost verbatim from a publication by the American Council for Drug Education. (Jones, 2001) This information has most likely been presented to many American youths. If this study is representative, then many of these youths have a certain amount of skepticism in these messages.

This skepticism may be based on personal experience. This experience may not necessarily come from personal drug use. In addition to the study by Jones and Rossiter (2001), Schoenbachler and Whittler (1996) presented many theories and results that point to environment as a major factor to adolescent drug usage.

One of these theories was based on a study by Tanner, Hunt, and Eppright (1991) concerning threat communications about sexually transmitted diseases. This study recognized that an individual's response to a threat is partly based on the social implications of that decision. An adolescent may be inclined to select a response that is the most socially acceptable, rather than one that minimizes the danger presented. This response may or may not be drug use. In fact, Fishbein et al (2002) found a negative correlation between the effectiveness of the public service announcements and "perceived norms," meaning that a significant number of those surveyed felt they (or their peers) were expected to use drugs. The impact that this sentiment may have on an individual decision is considerable.

An expansion of this theory was also presented in the study of Schoenbachler and Whittler (1996). The consideration of social implications was also based on a study by Elkind (1967) which suggested the concept of the "imaginary audience." An adolescent creates the "imaginary audience" when he or she considers exactly how others will respond to his or her actions. Though this theory was not proven in the Schoenbachler and Whittler study, it was said that this effect might not have been accurately measured. Nonetheless, the theory supports the importance of social implications in the choice to use drugs. (Schoenbachler, 1996).

As social implications may influence individual decisions, personal thoughts and perceptions probably have the greatest amount of weight. In recognition of this, Jones and Rossiter (2001) presented the theory of cognitive dissonance in their study. This theory was developed by Festinger (1957). The basic principle behind this theory is that individuals have the tendency to seek consistency among their thoughts and actions. A

discrepancy between the two will most likely prompt a change in attitude to accommodate the behavior. Three ways that dissonance can be eliminated is to (1) reduce the importance of dissonant beliefs; (2) add more consonant beliefs to outweigh dissonant ones; or (3) change the dissonant beliefs. The decision to follow one of these courses is based on the amount of dissonant beliefs, the importance attached to each belief, and the incentives involved. (Festinger, 1959) In this line of reasoning, an adolescent's decision to use drugs would be based on the internal and perceived external value placed on drug usage. If drug use is initiated, his or her personal perceptions of drugs would likely accommodate this action. Behavior then can only be altered by changing the individual's perceptions to the point that it initiates a modification of behavior. According to this theory, this is no easy task. It seems doubtful that a 30-second commercial could produce a sentiment so great that it completely modifies a person's behavior.

This leads to a discussion about the actual impact that could be expected from these messages. Supposing these messages are "high" in "sensation value" and draw the attention of a "high-sensation seeker," will there actually be an impact? Televised commercials have prompted people into action in the past, that action generally being buying a certain product or service. The key to success is often considered to be repetition. In fact, Palmgreen et al (2001) stated that "carefully targeted campaigns that achieve high levels of reach and frequency and with messages designed specifically for the target audience...can play an important role in future drug prevention." However, the target audience mentioned here is comprised of "high-sensation seekers". The complication here is the need of "high-sensation seekers" for novel stimuli. With anti-drug messages being viewed frequently, their individual novelty may be diminished. In

fact, enough repetition of the same message may eliminate the novelty of the entire message and produce a certain degree of novelty in an opposing message. It may be challenging to suggest that anti-drug public service announcements could actually produce higher levels of drug usage, but it is not an unreasonable consideration.

Conclusion

The studies discussed in this paper attempted to assess the proper design and impact of anti-drug public service announcements. Though all of the studies had their flaws, important concepts and considerations could be drawn from them. The issues of realism, level of sensation, and environment proved to be extremely influential when the scope of the messages was considered. However, the studies failed to adequately prove the effectiveness of anti-drug PSAs. It seems that these messages have come to serve as an affirmation for those who have already chosen not to use drugs. These messages may be completely ineffective on those involved in drug use, even if the message does have a “high sensation value.” In fact, these messages could serve as a source of amusement for current users and even affect these persons’ perceptions of other information presented to them. Overall, advertising is an inadequate method to resolving the “problem” of drug use among adolescents. The decision to use drugs seems to be one that is more personal than, for example, the decision on where to eat dinner. If one truly wants to reduce the incidence of illegal drug use, a more personal and honest approach should be taken.

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