

ESTIMATING THE AUDIENCE COVERAGE OF PSAs:
THE AD COUNCIL'S DRUNK DRIVING PREVENTION CAMPAIGN

by

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Abstract

To date, most of the research conducted on the effectiveness of public service announcements has focused on improving internal characteristics of advertisements, such as relevant message design and appropriate targeting. Scant research has been conducted on how media placement might influence PSA effectiveness. The Ad Council reported that in 1997, television stations donated \$129.6 million in airtime to PSAs, yet it appears there is little or no indication of how many people these messages have reached. The purpose of this study is to estimate the audience coverage achieved by the broadcast television portion of the Ad Council's drunk driving prevention campaign. Data for the top 30 U.S. markets were analyzed for February and March 1998 using a commercial reach-frequency program. The results showed that on average, only 11.2 percent of households in the 30 markets were exposed to at least one of the PSAs in the campaign. Almost half of the total 902 advertisements were aired during late night (1:00am-6:59am). Less than 10 percent were aired during prime time. The greatest number of PSAs was aired in Cleveland, whereas no ads were aired in St. Louis, Hartford-New Haven, or Minneapolis-St.Paul. Overall, the data suggest that despite the seemingly large amount of airtime and media dollars donated to PSAs by television stations, the advertisements are reaching a very limited number of people. This suggests that PSA effectiveness is not based solely on message design, but also extends to media placement.

Introduction

Public service announcements (PSAs) consistently have been used to inform the public about health-related issues such as drunk driving, drug abuse, and AIDS prevention. A PSA "is designed to give unbiased information on some public problem and is in the public interest" (Evans, 1978, p. 28). Lynn (1974) stated that PSAs are "persuasive, yet highly specialized forms of communication utilized to disseminate information on public issues to the masses" (p. 622) and to promote issues that are considered to be socially desirable (Garbett, 1981).

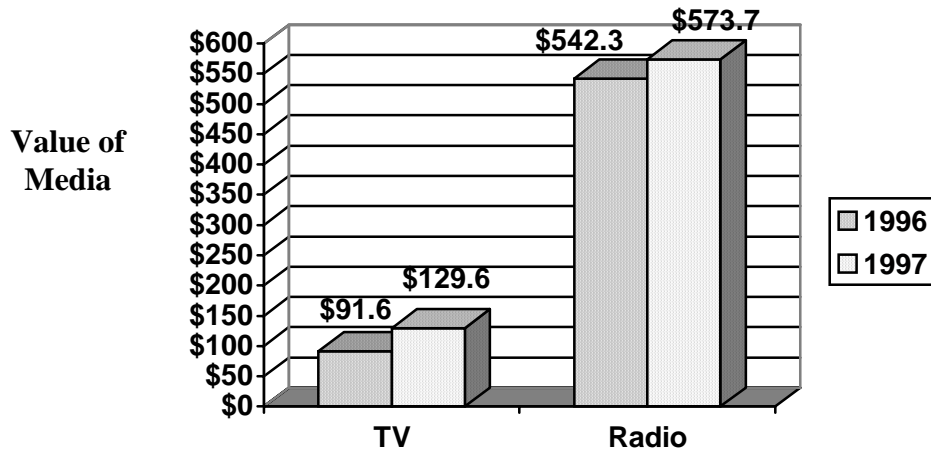
Essentially, there are four sources of PSAs: 1) the private firm that uses them as a form of institutional advertising, 2) an association that promotes a specific cause, 3) local,

state, and national governments, and 4) The Advertising Council (Ad Council), a non-profit organization supported by media, advertising agencies, advertiser organizations, and private firms.

The Ad Council is thought to be the single-most active source of PSAs. Recent figures indicate that in 1995, broadcasters contributed a total \$564.8 million in airtime to Ad Council messages, up more than 61 percent from the previous year. Cable contributed \$237.7 million, up 29.1 percent. The 1995 total of \$802.5 million for broadcast and cable television and radio is more than nine times the donated space of all other media combined, including outdoor, transit, newspaper, magazine, new media and business press.

In 1997, The Ad Council received \$996.2 million in donated time and space from all major forms of media combined, up seven percent from 1996 (Ad Council, 1998). Radio and television combined donated about \$703.3 million, a 48 percent increase from 1996. Radio is the larger supporter of Ad Council PSAs, contributing 58 percent of the grand total (Ad Council, 1998). In 1997, this medium contributed \$573.7 million to public service advertising, up from \$542.3 million the year before. Time donated by television also increased from \$91.6 million in 1996 to \$129.6 million in 1997 (McConnell & Albinak, 1998) [see Figure 1]. According to FCC chairman Reed Hundt, this increase is "a good example of the important contributions the media can make to serve the public interest" (A matter, 1995).

Figure 1: Media value (in millions) donated to Ad Council PSAs, 1996-1997



Source: McConnell & Albinak, 1998

PSA Effectiveness

There has been little consensus as to what constitutes an effective PSA. Lynn (1974) argued that while there is a wide range of methods used for PSA evaluation, PSAs that utilize some sort of an emotional appeal are the most effective in relating a message. Evans (1978) stressed that PSAs can affect behavioral intention with respect to changes in subjective norms and that “when designing message content, it would be propitious to stress subjective norms” (p. 34). William McGuire argued that successful PSAs focus on the availability of solutions rather than on the seriousness of the problem (Johnson et al., 1988). It seems, then, that an effective PSA should combine all of these elements.

Some researchers argue that while PSAs have the potential to reach large audiences (Maccoby & Solomon, 1981; Best, 1980), many audience members either do not notice the messages or fail to process the messages contained within them (Atkin, 1981; Flay & Cook, 1981). Even when PSAs *do* capture the audience’s attention long enough to educate and inform, the messages fail to lead to behavior change (Gantz,

Fitzmaurice, & Yoo, 1990; McGuire, 1984; Schmeling & Wotring, 1976). Gantz et al. (1990) found that messages in PSAs may lead target audiences to become more knowledgeable about an issue, but “their behaviors or practices often remain apparently unaffected by the messages” (p. 2).

Other researchers believe that, in general, audiences receive PSAs favorably and that public service messages may influence their behaviors. In a survey of 1,500 adults, 74 percent reported they paid at least some attention to PSAs (O’Keefe, 1989). Wooden (1996, 1994) suggested that PSAs have successfully addressed problems such as drunk driving, crime, and safety belt usage. Murry, Stam and Lastovicka (1993) found, using a time series analysis, that a public service campaign reduced drunk driving levels among males aged 18 to 24 over a two-year period.

There is also evidence that PSAs create widespread awareness of social problems and provide information about how these problems can be addressed (Wallack & DeJong, 1995; Donovan & Leivers, 1993). In a longitudinal study designed to isolate and measure PSA effectiveness, the Advertising Research Foundation (1991) revealed that PSA campaigns can increase awareness, change beliefs, and influence both behavioral intentions and actual behavior. Ognianova & Thorson (1997) analyzed both drunk driving PSAs and beer moderation advertisements to determine whether they had an effect on reducing drunk driving. Their data suggested that messages telling college students to drink in moderation and not to drink and drive were not only recalled, but may have led to a reduction in drunk driving.

Problems with PSAs

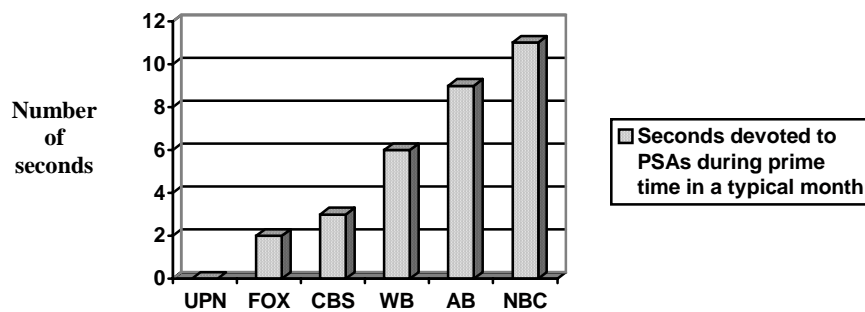
PSA campaigns can fail for a number of reasons. The most common of these is lack of appropriate targeting of messages (Delaney, 1981; Hanneman, 1973). Many times, campaigns are targeted toward a general audience and do not take into account the needs of specific targets (Flora, Maccoby, & Farquhar, 1989; Rogers & Storey, 1987; Flay & Sobel, 1983). In order for a PSA campaign to have the desired effect, the messages must be directed toward a chosen audience and must be tailored to challenge the negative attitudes and behaviors of that audience (Gotthoffer, 1998a).

The issue of targeting is further complicated when one considers the method by which PSAs typically are run. In both print and broadcast media, PSAs "often are submerged in an overwhelming clutter of programming and product advertisements and must be capable of (a) immediately attracting the attention of target audience members and (b) motivating these viewers to attend to the remainder of the message" (Palmgreen et al., 1991, p. 218). Although the amount of donated air time may be large, this can be misleading as PSA designers have no control over where, when, and how often their ads are broadcast. Station managers and publishers traditionally have provided PSAs with undesirable time slots that were not purchased by paying advertisers (Murry, Stam, & Lastovicka, 1996; Palmgreen et al., 1991; Delfin, 1984; Schmeling & Wotring, 1976). Therefore, the ability to target specific audiences through proper media placement is very limited.

In broadcast, very few PSA slots are allotted during prime time, despite the high number of viewers during that period (Katz, 1997). As depicted in Figure 2, in 1996 PSAs accounted for only a fraction of commercial time during prime time (Fleming,

1997). According to Donna Feiner, the Ad Council's senior vice president, media, "There is very little available time for PSAs on networks, especially on prime time. We would like to see a bigger share of time given to PSAs. We want to get these messages out...we know they work" (Katz, 1997, p 21). Despite these claims, PSAs continue to be run only where there is available time.

Figure 2: Monthly Prime Time Allocations for PSAs in Seconds



Source: Fleming, 1997

With the help of the Ad Council, FCC Chairman Reed Hundt has attempted to mandate that broadcasters donate 60 seconds of PSAs daily during prime time, one second of prime time for every million children in the U.S (McConnell, 1997). It is estimated this would cost about \$183 million per network each year if a 30-second spot is worth \$250,000. Hundt has argued this is "a small price for broadcasters to pay for the use of a public spectrum" (McConnell, 1997, p. 4).

It is not just cost that is an issue, but the number of different causes that have warranted PSA campaigns. As the number of public service causes has increased, the availability of time slots for any one PSA campaign has decreased (Mandese, 1987). This has made it increasingly difficult to stress the virtue of any one campaign (Foltz, 1989). It

also makes it difficult to achieve the repetition necessary to get any one message across. This has become particularly relevant with the recent attention paid to highly publicized social problems such as drug abuse and AIDS--whatever space is available usually goes to PSAs addressing these problems (Singer, Rogers, & Glassman, 1991). And while these issues are indeed important, "The emergence of these social problems does not diminish the importance of other social problems like drinking and driving" (Murry, Stam, & Lastovicka, 1996, p. 4).

Because PSA campaigns rely on donated-media rather than paid-media schedules, advertisers are unable control where and when PSAs are placed (Vingilis & Coultres, 1990; Bloom & Novelli, 1981). This led to the question of whether paid-media campaigns would be more effective than donated media campaigns. Murry, Stam, and Lastovicka (1996) addressed this question and found that paid- and donated-media campaigns against drunk driving were equally effective and cost efficient. It is important to note, however, that the studied advertisements for both the paid- and donated-media campaigns were equally creative and equally researched. The authors conceded that in reality it is unlikely that "any donated-media campaign--especially a poorly-planned donated-media campaign--can be as effective as a paid-media effort" (p. 24).

Even if paid-media campaigns were proven to be more effective, organizations such as MADD or the Ad Council do not have the resources available to run such campaigns. Therefore, the paid-media alternative is more realistic for government agencies that are allocated funding for PSA campaigns (Murry, Stam, & Lastovicka, 1996). Organizations such as the Ad Council must continue to rely on media practitioners to air their messages effectively.

Most of the research conducted in the area of PSA effectiveness has centered on message content in terms of the type of appeals used and how these appeals affect the targeted audience, rather than on dissemination of the message itself. To date there has been little if any published research on the subject of this study, which is the audience coverage of public service campaigns. This information, which typically is captured by measures of reach and average frequency, is vital to the planning and evaluation of commercial advertising campaigns.

Reach typically is defined as the percentage or number of target audience members who are exposed to media vehicles (e.g., publications, broadcast or cable programs) that carry advertisements or to the messages (e.g., advertisements, PSAs) themselves. Average frequency is the mean number of times target audience members who are reached are exposed to those vehicles or messages. A monthly time frame typically is used as the basis for reach and average frequency estimates.

Broadcasters, the Ad Council and the FCC, however, have been handicapped in their assessment of these campaigns because they typically have available only limited data on the media value of aired PSAs along with information on the number of announcements by station, market and time period. Therefore, it is important that this information be extended to include estimates of audience coverage, such as reach, particularly since it has been shown that audience targeting is decisive in overall campaign effectiveness. The purpose of this study is to demonstrate how audience coverage can be estimated and apply this reasoning to a current campaign, namely the Ad Council's Drunk Driving Prevention campaign.

Drunk Driving Prevention Campaign

The Ad Council's Drunk Driving Prevention campaign has aired for many years. In response to a request by one of the authors, the Ad Council provided details of the latest campaign for the first quarter of 1998. During this period the television campaign consisted of five announcements. Information also was provided for each of the top 30 US markets, including the number of stations and announcements by daypart and the value of the donated air time. This data is displayed in Tables 1 and 2 for February and March 1998 respectively.

Tables 1 and 2 Here

The Ad Council obtained this information from tracking studies conducted by Broadcast Verification Services (BVS), which tracked the announcements through an audio coding system. BVS tracked the PSAs in 103 markets, 24 hours per day, seven days per week. In early 1998 BVS monitored 513 broadcast television stations, four broadcast television networks and 31 cable television networks.

Method

To estimate the potential audience coverage of this campaign, average Designated Market Area (DMA) television home ratings for the top three local stations in each market were obtained for February 1998 (*Media Market Guide*, 1998). These figures, which are updated quarterly, were used for both February and March. A DMA is defined as the unique cluster of counties surrounding a metropolitan area. Each US county is assigned to one DMA. Ratings are defined as the percentage of a target audience, such as

DMA households in each of the top 30 US DMAs, exposed to a particular media vehicle, such as a radio or television program.

For each of the 30 markets, *Media Market Guide* (MMG) provides ratings for all standard dayparts, except late night. To estimate late night ratings for each market, the ratio of the late night Households Using Television (HUT) to late fringe HUT was obtained for all US television households (Sherman, 1995) and applied to the average late fringe ratings for each of the 30 markets.

The first column of Table 3 lists the daypart definitions used by BVS. These definitions match those of MMG with the exception of two dayparts. The BVS early fringe daypart definition includes three MMG dayparts: early fringe (4-7:30pm), early news (6-7:30pm), and prime access (7:30-8:00pm). The BVS late fringe daypart includes late news (11:00-11:30 pm) and late fringe (11:30pm-1am). For these two BVS dayparts, a weighted average rating was estimated using the number of half-hour segments in a MMG daypart definition as the weight for the average rating in that MMG daypart.

Table 3 Here

To estimate television program and PSA reach, Telmar's TV SpotPlan program was used (Telmar, 1998). Among other features, this program evaluates television schedules, taking into account the kind of data available in this study, including station household ratings by daypart and the number of insertions. To estimate PSA reach, the average daypart program ratings were multiplied by 31 percent, which is the average Proved Commercial Registration (PCR) score for adults for all commercials evaluated by Gallup and Robinson's *In-view* television impact service. PCR is defined as the percent of qualified viewers of a program who can recall and accurately describe a particular

commercial in that program on the day following the telecast when prompted by the brand name or product. This indicates that, on average, 31 percent of adults watching a particular television program also can provide evidence after one day has passed that they saw a particular commercial contained in the program.

To properly account for between- versus within-station duplication, when more than one station in a market aired the PSAs, the total number of announcements were divided as evenly as possible among the stations.

Results

Tables 1 and 2 indicate that there is wide dispersion in the number of spots aired across markets. For example, in February the market total ranged from 118 in Cleveland to none in Minneapolis-St. Paul, St. Louis and Hartford-New Haven. The range in announcements is similar for March, with Cleveland accounting for 85 at the high end and none for the three markets just mentioned.

Using data contained in Tables 1 and 2, Table 3 summarizes the daypart distribution for both months. Nearly half of the announcements occurred in the late night daypart from 1:00am to 6:59am. In February, 45.0 percent of the announcements were in the late night daypart, while this figure is 47.2 percent for March. Less than ten percent of the announcements occurred in prime time, with 7.3 percent in February and 8.7 percent in March.

Gross Rating Points (GRPs) are the sum of insertions times ratings for particular markets. GRPs show the duplicated audience delivered by a schedule. In this instance they serve to weight the number of announcements by daypart to reveal the gross value of the insertions to campaign effectiveness. The GRP data contained in Tables 1 and 2 are

summarized in Table 3. Whereas the late night daypart accounted for nearly half of all announcements, the value of those announcements in terms of GRPs is only 17.4 percent in February and 20.1 percent in March.

In terms of overall weight, early fringe is the dominant daypart in February with 32.8 percent of the 59.2 total GRPs that month. Daytime is the dominant daypart in March with 28.5 percent of that month's total GRPs.

The last two columns of Tables 1 and 2 show market-by-market the estimated television program and PSA reach for each month respectively. As with the number of insertions and GRPs, there is substantial variation in the reach of programs carrying the PSAs. Using February (Table 1) as an example, the reach ranges from a high of 93.4 percent in Cleveland to zero in Minneapolis-St. Paul, St. Louis and Hartford-New Haven. Across all 30 markets, 28.9 percent of households are estimated to have viewed one or more programs carrying a campaign PSA.

The results are similar for March with a range of 91.7 percent program reach in Cleveland and none in the three markets mentioned earlier. Across all 30 markets the audience for programs carrying a campaign PSA is approximately 36.2 percent of households.

As with program coverage, estimated PSA reach was highest in Cleveland at 66.1 and 74.5 percent in February and March respectively. Across all 30 markets the average PSA reach was 10.5 percent in February and 13.7 percent in March.

Discussion

The authors believe that this study may be the first published as to the potential audience coverage of a PSA campaign. With data provided by the Ad Council, the intent

was to demonstrate procedures that others might follow and refine. Another goal was to draw implications from the results as to the efficacy of PSA efforts. Among the findings, several stand out.

First, there is extreme variation as to the number and coverage of campaign PSAs across markets from little or nothing within a month to up to three quarters of market households. This suggests that those who wish to improve the level of coverage overall might make substantial gains by learning from the experiences in markets with supportive stations and duplicating these efforts, where feasible, in those markets that currently offer little or no support.

Second, although the total number of announcements aired across all 30 markets might seem impressive at 398 in February and 504 in March, nearly half are in the late night daypart from 1:00am to 6:59am. Furthermore, this daypart accounts for only 20 percent of the GRPs generated by the television campaign. Depending on the market and stations involved, the rating of one prime time program can be five to ten times the magnitude of one late night program rating. This is exemplified by the data in Tables 1 and 2. The five markets delivering the greatest overall message coverage in February (Cleveland, Pittsburgh, Miami, Boston and Seattle, respectively) and March (Cleveland, Miami, Denver, Boston, and Orlando, respectively) all aired PSAs during prime time. Therefore, ongoing efforts to get stations' support for other dayparts beyond late night are well placed.

Third, overall the PSAs themselves cover a very small percentage of households. Even though this campaign will accumulated audience over time, the upper bound is around 15.6 percent over two months if a typical advertising carry-over rate of 18 percent

is applied [$15.6 = 13.7 + 18\% * 10.5$]. Advertising carry-over or retention is defined as the percentage of a target audience that exhibits measurable communication effects in a particular month and also exhibits these effects in the next month. Of course, this does not take into consideration the radio component of the plan, which has been left to future research and is likely to increase the overall coverage of the campaign.

Finally, the analysis presented in this study used the average ratings within a daypart for the top three stations in a market. Consequently, the low coverage that is indicated by this analysis probably is nevertheless overstated. Stations that support PSAs may not necessarily be among the top three in a market. Just as stations tend to favor the least desirable (late night) daypart to fulfill part of their public service obligation, so too are they likely to favor weaker programs within dayparts, and weaker positions within commercial pods, and to favor weaker pods between programs versus those within programs.

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