
Ethical Advertising Research Standards: Three Case Studies

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Demands for major changes in the regulation of advertising have come forth as a result of the December, 1991 publication of three articles concerning the cartoon character Joe Camel. The articles all appeared in the same issue of the Journal of the American Medical Association and received extensive coverage in major newspapers and magazines. This paper examines each article to determine its conformance with 15 ethical standards gleaned from various associations and journals; these standards represent the accepted professional norms of conduct for social science research. There is also a closer examination of one of the studies using discovery material from a law suit against the R.J. Reynolds firm. This affords a unique opportunity to examine the ethical standards used in that study.

Five reviewers from different disciplines were asked to independently evaluate each of the papers. The results revealed major concerns about the quality of each study. When these reviews are laid against the ethical guidelines for social science research, it appears there were major flaws in the conduct of all three. Particularly highlighted are the advocacy nature of the research and serious questions concerning reliability and validity. Additional concern about one of the studies is raised by the litigation discovery material, as there is evidence of pre-determined results, non-reporting of conflicting data, and "adjusting" of the sample to produce desired results consistent with researchers' pre-conceived theories.

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Introduction

Demands for major changes in the regulation of advertising have come forth as a result of the December, 1991 publication of three articles concerning the cartoon character *Joe Camel*. The culmination of these demands came in 1993 when the attorneys general of 27 states and the Federal Trade Commission's staff recommended the outright ban of a specific advertising campaign. The articles stimulating this regulatory activity appeared in the same issue of the *Journal of the American Medical Association (JAMA)* accompanied by three editorials addressing the question of advertising regulation. The product category that attracted such interest was cigarettes, and the specific advertising campaign was for R.J. Reynolds Tobacco Company's *Joe Camel* series. Various news media, public officials and researchers have identified the cartoon character erroneously as *Old Joe*. In actuality the long-standing depiction of a camel in a desert scene on the camel package is *Old Joe*. *Joe Camel* is the more recent vintage cartoon character used in Reynolds' advertising for the brand.

The research cited in *JAMA* was subsequently reported on television news programs and in every major newspaper in the United States. It also received extensive coverage in the major weekly news magazines. Overall this is an unusual response to three advertising research articles and provoked an interest in their efficacy to generate such an avalanche of calls for changing public policy. The specific goal of this paper is to examine each of the articles to determine its conformance with ethical standards defined as "the accepted professional norms of conduct" for such research (*Webster's Ninth Collegiate Dictionary*, p. 427).

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Advocacy of Public Policy Changes

It is difficult to quantify the news coverage and subsequent demands for public policy reformulation, including banning *Joe Camel*. In preparation for this paper, there were 172 newspaper articles and 71 wire service stories reviewed which reported on the *JAMA* articles. The following headlines are representative of the tone of those news reports:

Joe Camel Is Also Pied Piper, Research Finds (Wall Street Journal 12/11/91, pp. B1-B4)

Study: Camel Cartoon Sends Kids Smoke Signals (Boston Herald 12/11/91, p. 7)

To Some, Cartoon Camel Isn't Funny (Seattle Post-Intelligencer 12/11/91, p. 9)

Ban: Health Groups Say Study Proves All Tobacco Ads Must Be Crushed Out (Detroit News 12/12/91, p. 5)

Also reviewed were 82 print media editorials and 23 syndicated columnists. Of these, there were 32 specific editorial calls for the banning of *Joe Camel* and/or a more stringent regulation of tobacco advertising. These include the *Atlanta Journal and Constitution* (December 14, 1991), *Boston Globe* (December 12, 1991), *Denver Post* (March 15, 1992), *Fort Worth Star-Telegram* (December 17, 1991), *New York Observer* (March 23, 1992), *Philadelphia Inquirer* (March 15, 1992), *Raleigh News & Observer* (March 12, 1992), *San Francisco Examiner* (March 17, 1992), and the *Syracuse Herald-Journal* (March 11, 1992). Shortly after publication of the articles, the attorneys general of 26 states began to lobby for more control over cigarette advertising and to call for repeal of a section of the Cigarette Labeling and Advertising Act (Zukin 1992 and Levine 1992). The New York Metropolitan Transportation Authority, citing the research in *JAMA*, banned all tobacco ads on subways, buses and trains beginning in 1993 (Harrigan 1992). Senator William Cohen called for Congress to be involved in an effort to ban *Joe Camel* (*Scripps Howard News Service* 1992), and Representative Henry Waxman asked the House Subcommittee on Health and the Environment to recommend strict controls on all advertising and specifically to prohibit the RJR ad campaign (Waxman 1991). *Advertising Age* (January 1992) called upon RJR to drop the *Joe Camel* campaign. The Surgeon General of the United States, the Secretary of the Department of Health and Human Services, and the American Medical Association demanded that R.J. Reynolds stop using *Old Joe* (Brown 1991; Dagnoli 1991; Enrice 1992; Horovitz 1992;

Lipman 1992; Kong 1992; Roberts 1992; Snider 1991; Standora 1992; *U.S. News & World Report* 1992; Vesey 1992; Warner 1992; *Washington Times* 1992). In March, 1992 the American Cancer Society, American Heart Association and American Lung Association formally petitioned the Federal Trade Commission to immediately ban the *Joe Camel* campaign (Cimons 1992). Perhaps the two strongest public policy outcomes from the three *JAMA* articles occurred later in 1993. First, the staff of the Federal Trade Commission, citing the *JAMA* articles, recommended that the FTC seek an outright ban of the R.J. Reynolds's *Joe Camel* advertising campaign (*Wall Street Journal*, August 1993). Second, the attorneys general of 27 states in September 1993 formally asked the FTC to ban the *Joe Camel* advertising campaign, citing the *JAMA* publications (*Associated Press* 1993).

Evaluation Procedure

A census of major research associations and journals was undertaken to ascertain their research guidelines. These included the fields of statistics, advertising, marketing, economics, sociology and psychology. Some disciplines and journals reported no official statements concerning research guidelines, including the *American Academy of Advertising*, the *Journal of Advertising*, and the *Journal of Current Issues and Research in Advertising*. However, there are guidelines available from the *Journal of the American Statistical Association*, the *American Economic Review*, the *Journal of Marketing Research*, the *Journal of Marketing*, the *American Marketing Association*, and the *American Psychological Association*. These were combined with the "instructions for authors" of the *Journal of the American Medical Association*. (1993) to produce a compendium of 15 standards upon which to judge social science/business research. In particular the *JAMA* guidelines (*Journal of the American Medical Association* 1993) call for the following:

1. The manuscript represents valid work.
2. Authors will produce the data upon which the manuscript is based.
3. Only those conclusions of the study that are directly supported by the evidence reported should be given.

The fifteen standards are detailed in Table 1, with reference to the professional associations for each. It is emphasized that the standards cited are those which

Table 1
Research Standards of Social Science Associations & Journals

Research Standards	Association or Journal
Sufficient information provided for judging quality of the results	American Statistical Association; American Economic Review;
Built-in controls	American Psychological Association;
Reliability	American Psychological Association; American Medical Association; American Marketing Association
Validity	American Psychological Association; American Medical Association; American Marketing Association
Outcome measures are clearly related to variables of investigation	American Psychological Association;
Full and unambiguous testing of hypotheses	American Psychological Association;
Subjects representative of population	American Psychological Association
Results are generalizable	American Marketing Association
Convergent results reported and/or discussed	American Psychological Association; American Marketing Association
Claims and assertions are supported by the research	American Medical Association; American Marketing Association
Reporting or discussion of the methodological limitations	American Marketing Association
Complete review of the literature	American Marketing Association
Full details about the treatment of subjects	American Psychological Association
Speculation of authors clearly identified	American Marketing Association
"Full disclosure" to allow for reproducing study	American Statistical Association; American Economic Review; American Medical Association; American Marketing Association

the association or its journal has overtly stated.

One perspective is that scientific and ethical standards are separate issues, and an argument could be made that what is addressed here are scientific re-

search standards. However, from another perspective (adopted here) the 15 standards used are primarily "ethical" in nature. There is the possibility that a reader could view the shortcomings in the *JAMA*

articles primarily as shortcomings in the scientific method. However, this goes beyond any mere semantic disagreement. To support the definition used here, *Webster's Ninth New Collegiate Dictionary* defines "ethical" as "conforming to accepted professional standards of conduct" (1990, p. 427). A further discussion in *Funk & Wagnalls New Encyclopedia* concludes that "the empirical social sciences....including psychology, impinge to some extent upon the concerns of ethics in that they study social behavior" (1981, p. 177). And Garrett argues, "no one can study business ethics casually without considering the professional associations and professional codes of conduct" (1963, p. 159). The position embraced in this paper is that what is being used are *ethical* standards as defined above.

The three articles (Fischer et al. 1991; DiFranza et al. 1991; Pierce et al. 1991) were submitted to five researchers in the fields of marketing management, advertising, consumer behavior, strategic management & public policy, and marketing research, for their independent reviews. The reviewers, all from different major universities, were a judgment sample selected because they are full professors, actively engaged in research programs in their respective fields and all serve on editorial review boards for academic journals in their fields. They were recruited because they continually practice and review research in the social sciences. They were not provided with the research standards as discussed above, but rather were asked to evaluate independently each of the three papers on the basis of the usual norms for their disciplines. The net result was 85 pages of evaluative comments, both general and specific, concerning the three articles.

The reviews from these five were then examined, and the author made a judgment as to the applicability of their individual comments to the 15 standards gleaned from the various associations and journals to determine which were covered in each of the independent reviews. The rule for applying the standards was that there was a clear statement that addressed the standard. For instance, for attributing a concern about validity, the reviewer had to specifically mention a validity problem and discuss it. A table is provided for each article to summarize reviewer judgments. In addition, discovery material produced during litigation against R. J. Reynolds (Mangini v. R.J. Reynolds Tobacco Company, et al.) allows a closer examination of one of the studies (DiFranza et al. 1991) and affords a unique opportunity to examine the ethical standards used by the researchers.

Reviewer Evaluations

Obvious space limitations preclude the reporting of the detailed evaluations of all five reviewers. However, in the following sections, the major concerns expressed about each paper are shared and the concurrence of each paper to the 15 standards is discussed. While the standards on which the majority of the reviewers expressed concern about each of the three papers are highlighted, there were no instances where a manuscript was not cited for concern about a standard by at least by one of the reviewers. The question of the advocacy nature of research is not addressed in any of the professional standards, but the advocacy position of the authors of all three papers was cited by all five reviewers in the evaluations.

Fisher et al. Review

This article reports on a study to investigate "brand logo recognition by children ages 3 to 6 years." Children were instructed to match logos with one of 12 products pictured on a game board. Twenty-two logos were tested, including those representing children's products, adult products, and those for two popular cigarette brands (*Camel* and *Marlboro*). The setting for the research was in preschools in Augusta and Atlanta, Georgia. A convenience sample of 229 children attending 10 preschools was used. Fisher et al. (1991) claim the children demonstrated high rates of logo recognition and, when analyzed by product category, the level of cigarette logos was intermediate between children's and adult products. The recognition of the *Disney Channel* logo and *Joe Camel* (erroneously labelled *Old Joe* by the authors) was described as "highest in their respective product categories" (Fischer et al. 1991, p. 3145).

The summary of the reviews concerning the Fisher et al. article (1991) indicates eight standards on which the majority of the reviewers identified errors in the research (Table 2).

Four of the reviewers identified as a problem the use of the recognition task. Among the specifics was that recognition, used by Fischer et al. (1991) to measure knowledge of logo/trade characters, is subject to extensive guessing (Mizerski 1982) and was heightened by the conduct of the experiment. This latter criticism is relevant because (1) only cigarette use was asked of parents when they considered granting permission for their children to participate; (2) a "don't know" option was not offered; (3) matching logos/trade

Table 2
Fischer et al. (1991), "Brand Logo Recognition....."

RESEARCH STANDARDS*	REVIEWER A MARKETING	REVIEWER B ADVERTISING	REVIEWER C CORPORATE STRATEGY	REVIEWER D CONSUMER BEHAVIOR	REVIEWER E MARKETING/ ADVERTISING
Sufficient information provided for judging quality of the results				✓	✓
Built-in controls			✓	✓	
Reliability	✓	✓	✓	✓	✓
Validity	✓	✓	✓	✓	✓
Outcome measures are clearly related to variables of investigation		✓		✓	✓
Full and unambiguous testing of hypotheses		✓			✓
Subjects representative of population	✓		✓		
Results are generalizable	✓	✓			✓
Convergent results reported and/or discussed			✓	✓	✓
Claims and assertions are supported by the research		✓		✓	✓
Reporting or discussion of the methodological limitations		✓			
Complete review of the literature	✓	✓			✓
Full details about the treatment of subjects					✓
Speculation of authors clearly identified		✓		✓	✓
"Full disclosure" to allow for reproducing study	✓				✓

*A check mark indicates that a reviewer expressed concern about a particular issue

characters to a product is a task disproportionately favoring a cigarette match; (4) children were not instructed as to what constituted a correct match; and (5) the investigators may have also interviewed the subjects, leading to interviewer bias. A more fundamental problem cited by reviewers is that there is no basis offered for its underlying premise that early logo recognition leads to smoking.

The study found that brand logo recognition increased with age and that, by age 6, recognition of *Joe Camel* is comparable to the *Disney Channel* logo. Criticism by reviewers centered on a failure to stress that six-year olds do quite well in recognizing "adult logos" such as Chevrolet. Also cited was the statement that recognition of the *Disney Channel* logo and *Joe Camel* was "highest in their respective product categories" (Fischer, et al. 1991, p. 3145). The reviewers' criticized the authors for failing to point out that the respective categories were "children's brands" and "cigarette brands" and that the *Disney Channel*, *McDonald's*, *Burger King*, *Dominos Pizza*, *Coca Cola*, *Pepsi*, *Nike*, *Chevrolet* and *Ford* had higher recognition scores than *Joe Camel*.

Questions concerning validity recur throughout the reviews. Cited were the small size of the choice set and the likelihood that, given few choices, the children employed some heuristic choice rules and elimination procedures which systematically biased the results. One reviewer wondered whether, if the picture of a zoo had been offered as a product category, the subjects then would have matched *Joe Camel* to the zoo and what that result would have meant? Another reviewer's comment regarding validity states: "You are really just asking the subjects 'what is missing from this picture?' So, if the subjects correctly identify the product, they are identifying what is missing from the picture, a task right out of kindergarten curricula." Reviewers said it is an obvious violation of experimental design protocol to have the stimulus material and the dependent measure be parts of the same image, separated only for the purpose of this study.

Also of concern is that the authors go far beyond their basic methodology by inferring advertising recognition to a simple matching exercise by children. Indeed literature (Leckenby and Plummer 1983) cited by the authors concludes that advertising recognition requires a complex, multi-variable measurement, not the more simplistic matching exercise offered by Fischer et al. (1991). The authors ignore data showing improvement in correctly matching logos to products among older children in the study and likewise

do not report on mismatches (other logos to cigarettes and other cigarette logos to non-cigarette products). Concerning the former, it was suggested by reviewers that what is measured here is not logo recognition, but simply a natural progression toward increased cognitive skill in matching.

Beveridge (1950) instructs researchers to make a thorough study of all of the relevant literature, so that not even one significant article is missed. The failure of the authors to consider the basic works in recall and recognition (Bagozzi and Silk 1983; Finn 1988; Mizerski 1982; Singh and Rothschild 1983; Valentine and Blum 1961; Wells, Burnett and Moriarity 1989) disturbed reviewers. Another area of concern by the reviewers was a citation from McNeal (1987) which is only his speculation about children's shopping behavior and is not a research-based citation although it is seemingly positioned as such by Fischer et al. (1991, p. 3147).

All of the reviewers criticized the conclusions reached in the paper. These included conclusions that "very young children see, understand, and remember advertising" (Fischer et al. 1991, p. 3145); that "children's knowledge of cigarette brand logos is most likely the result of their exposure to environmental tobacco advertising" (Fischer et al. 1991, p. 3148); and that "R. J. Reynolds Tobacco Company is as effective as the *Disney Channel* in reaching 6-year old children" (Fischer, et al. 1991, p. 3148). The reviewers describe these as going far beyond the study's design or findings and clearly indicative of an advocacy position.

Pierce et al. Review

This article reports on a study entitled "Does Tobacco Advertising Target Young People To Start Smoking?" Using a telephone survey of California adults and teens, Pierce et al. examined which cigarette brand respondents thought was most heavily advertised and which brand they smoked. The 1990 California data were compared to data from a 1986 national telephone survey on brand choices of adults. This part of the study was to ascertain the relative market share of both the *Camel* and *Marlboro* brands among "younger smokers" (Pierce et al. 1991, p. 3164). The article reaches a conclusion that: (a) perception of advertising is high among young smokers; (b) market-share patterns across age and sex groups follow the perceived advertising patterns; and (c) changes in market share resulting from advertising occur mainly in young smokers. The authors claim that "cigarette

advertising encourages youth to smoke and should be banned" (Pierce et al. 1991, p. 3154).

The reviewers' findings for the Pierce et al. study show eleven standards on which the majority identify errors (Table 3).

The consensus of the reviewers was that this study violates the basic rules for scientific research because the data reported are incomplete and non-comparable. In the "results" section of the paper, Pierce et al. (1991, p. 3155) report several percentages dealing with brand identification. However, there are no statistical tests of the differences cited; scientific research would call for determining whether differences are significant. There is no way to substantiate any of this because the authors never reveal their underlying data (e.g., we do not have data on the number of 12-17-year olds in the study).

Reviewers made a simple, comparable evaluation of those data which were available. It shows results directly counter to those offered in the article. Using the data in Tables 1 and 2 (Pierce et al. 1991, p. 3156) for the only age category consistent across the data (ages 18-24), 70.4% of all smokers in the age category identify Marlboro as the brand they purchased, while less than 50% of all respondents (smokers and non-smokers) identified Marlboro as the most advertised brand. Conversely only 9.5% of all smokers in the 18-24 category identified Camels as the brand they smoked, while more than 20% identified Camel as the brand advertised the most. This certainly does not support the authors' conclusion of "purchase parallelism" (Pierce et al. 1991, p. 3156). Reviewers concluded that this begins to cast doubt on any correlation between the "judgment" as to most advertised brand and purchase behavior.

The reviewers criticized the extensive use of non-research-based-references and of citations only from medical science and public health sources. The criticism centers on the ignoring of the richness of literature and research available from other disciplines (e.g., marketing, advertising research, economics).

Finally, the authors mislabeled the constructs they measured. One example is in the "comment" section, where the authors' state that "our results suggest that tobacco advertising is causally related to young people becoming addicted to cigarettes" (Pierce et al. 1991, p. 3158). The reviewers noted that this study never measured addiction. The paper also offers a conclusion regarding "recall" and "recognition" of advertisements (Pierce et al. 1991, p. 3157). Again, the reviewers noted that this study never measured recall or recognition. Specifically, the study measured

the judgment of the participants as to the brand of cigarettes advertised the most — certainly this is not aided or unaided recall.

DiFranza et al. Study

This study was subjected to the same evaluative processes as the other two articles: five independent reviews subsequently evaluated against the set of ethical standards previously discussed. However, as reported earlier there is litigation discovery material that provides an added opportunity to consider the ethics of the DiFranza et al. research (Mangini v. R. J. Reynolds Tobacco Company et al. 1992). It is emphasized that the individual reviewers were not privy to this material and it provided no input to their evaluations.

The DiFranza et al. (1991) study's declared objective was to determine if RJR Nabisco's cartoon-theme advertising is more effective in promoting Camel cigarettes to children or to adults and to determine if children see, remember, and are influenced by cigarette advertising. The research focused on the recognition and appeal of the *Joe Camel* (again erroneously labelled *Old Joe* by the authors) advertising campaign among students (aged 12-19 years) in five sections of the United States and compared this to data for registered adult drivers (aged 21-87 years) from Massachusetts. Subjects were shown a "masked" ad to determine whether they recognized *Joe Camel*. They were then shown a series of six advertisements and asked to answer yes or no questions about each ad's "appeal." Finally they were asked questions about smoking behavior and brand preference. The study concludes that *Joe Camel* advertisements were better known among the student sample than among adults, that the advertisements' "appeal" scores were higher for the student sample, and that more students reported Camel as their preferred brand. The authors also reached a conclusion that "*Old Joe* Camel cartoon advertisements are far more successful at marketing Camel cigarettes to children than adults" (DiFranza et al. 1991, p. 3149).

The reviewers' evaluations of the DiFranza et al. article shows eleven standards on which the majority of the reviewers identified errors in the reported research (Table 4).

DiFranza et al. (p. 3152) state "the fact that children are more attracted to the themes used in the *Old Joe* cartoon character advertisements may also explain why (the children) are more familiar with them (the advertisements)." The reviewers noted that

Table 3
Pierce et al. (1991), "Does Tobacco Advertising Target Young People....."

RESEARCH STANDARDS*	REVIEWER A MARKETING	REVIEWER B ADVERTISING	REVIEWER C CORPORATE STRATEGY	REVIEWER D CONSUMER BEHAVIOR	REVIEWER E MARKETING/ ADVERTISING
Sufficient information provided for judging quality of the results			✓	✓	✓
Built-in controls		✓	✓	✓	
Reliability	✓	✓	✓	✓	✓
Validity	✓	✓	✓	✓	✓
Outcome measures are clearly related to variables of investigation		✓	✓		✓
Full and unambiguous testing of hypotheses		✓		✓	✓
Subjects representative of population			✓		✓
Results are generalizable		✓		✓	✓
Convergent results reported and/or discussed		✓		✓	✓
Claims and assertions are supported by the research		✓			✓
Reporting or discussion of the methodological limitations					✓
Complete review of the literature	✓		✓		✓
Full details about the treatment of subjects			✓		✓
Speculation of authors clearly identified		✓	✓		✓
"Full disclosure" to allow for reproducing study		✓		✓	✓

*A check mark indicates that a reviewer expressed concern about a particular issue

Table 4
DiFranza et al. (1991), "RJR Nabisco's Cartoon Camel Promotes Camel....."

RESEARCH STANDARDS*	REVIEWER A MARKETING	REVIEWER B ADVERTISING	REVIEWER C CORPORATE STRATEGY	REVIEWER D CONSUMER BEHAVIOR	REVIEWER E, MARKETING/ ADVERTISING
Provide sufficient information to judge quality of the results			✓	✓	✓
Built-in Controls	✓	✓	✓	✓	✓
Reliability		✓	✓	✓	✓
Validity		✓	✓	✓	✓
Outcome measures not clearly related to variables of investigation		✓	✓		✓
Full and unambiguous testing hypotheses		✓	✓	✓	✓
Subjects representative of population	✓		✓		✓
Results are generalizable	✓	✓	✓		✓
Convergent results reported and/or discussed			✓		✓
Claims and assertions supported by the research		✓	✓		✓
Reporting or discussion of the limitations of the methodology used			✓		✓
Complete review of the literature	✓	✓			✓
Full details of the treatment of subjects involved			✓		✓
Speculation of authors clearly identified		✓			✓
"Full disclosure"/Reproducibility of Data		✓	✓	✓	✓

*A check mark indicates that a reviewer expressed concern about a particular issue

the investigators did not control for such confounding influences in their research. Elimination of other possible sources of explanation is necessary in causal research and jeopardizes the study's internal validity (Campbell and Stanley 1963).

Also cited was the sampling procedure employed. Groups of 60 students, grades 9-12, in 5 different schools were surveyed. Students ranged from 12 to 19 years old, with an average age of 16 years. The reviewers were troubled by the non-disclosure of those who were presumably of legal smoking age: 18 years in Massachusetts, Nebraska and Washington; 17 years in Georgia; and no age limit for smoking in New Mexico. One reviewer pointed out that, even with being conservative (leaving out the New Mexico sample) there were still 31% of the students in the study who could legally smoke.

The "appeal" score measures were described by reviewers as essentially forced response binary choices and were questioned as a method of assessing an advertisement's "appeal." The authors had apparently not read the vast amount of literature on scaling and data analysis. One reviewer described the use of such binary choices as naive and "sophomoric" in level of research design. Included are two questions focusing on "cool": Is the ad cool or stupid, and is *Old Joe* cool? (DiFranza et al. 1991, table on p. 3151). The authors report significant differences in the mean appeal score for teens and adults, but do not compare either result to what would be expected due to chance alone. The expected appeal score with random choices is 2.0, the actual score reported for students is 2.1 (1.4 for adults).

The authors present data regarding smokers versus non-smokers, but there is no definition of "non-smokers" offered and the underlying data for non-smokers is not given. Reviewers said that the authors have gone far beyond their data when they conclude that "approving attitudes toward cigarette advertisements seem to precede smoking" (DiFranza et al. 1991, p. 3151). They cite a need for longitudinal data which are not offered.

The authors did not report which ads they tested. They also did not report any analysis of the possible differences among the six ads tested. Reviewers observed that it is unlikely that the advertisements would be the same, except as an artifact of the methodology. This omission precludes any rigorous evaluation, including replication efforts. Likewise there is no indication that the order of the ads was randomized, a common practice in research methodology. Without randomization, the responses cannot be assumed to be independent; with the assumption

of independent responses, rigorous statistical testing may not be valid, assuming the study used each answer as an observation.

In much the same vein, DiFranza et al. (table, p. 3151) report that "due to incomplete questionnaires, respondents for some questions may be fewer." There is no information given on this incompleteness. Reviewers cited this as a critical omission since it precludes any judgment as to data reliability.

The reviewers also criticized the heavy reliance on unpublished data (DiFranza et al. 1991, p. 3149-50) and on what one reviewer described as playing "fast and loose with the literature." An example is the statement "peer influence is virtually gone by the age of 16 years" (DiFranza et al. 1991, p. 3152). The reviewers were disturbed by ignorance of more than sixty years of social science research documenting normative social influence among adults and labeled this as indicative of blatant advocacy by the authors.

DiFranza et al. conclude with the statement, "our study provides further evidence that tobacco advertising promotes and maintains nicotine addiction among children and adults" (1991, p. 3152). As three reviewers point out, the authors never studied addiction.

Discovery Documents, DiFranza Interviews and Correspondence

As a result of the legal action undertaken against R.J. Reynolds (Mangini v. R. J. Reynolds Tobacco Company, et al.), there is available a compendium of documents from the files of Dr. DiFranza. These afford a unique opportunity to examine the ethical standards used in this research effort. In summary there are six areas of concern, and each is discussed briefly below.

Predetermination of Results. Documents from the discovery process indicate that Dr. DiFranza predetermined the results of his study in an effort to generate media coverage. In a letter to one of his co-authors (Richards 1991), Dr. DiFranza cites a previous inability to provide reporters with "proof that tobacco companies are advertising to children. I can't point to any one piece of evidence as a smoking gun and say 'here, this proves it.' Well I have an idea for a project that will give us a couple of smoking guns to bring to the national media." This raises an ethical concern for the scientific objectivity of the study. But-tressing this are the following statements which pre-date the undertaking of the research: (a) "I am pro-

posing a quick and easy project that should produce...evidence that RJR is going after kids with their Camel ads" (Richards 1991, p. 1) and (b) "Survey results reveal that both the 'Old Joe' character and the Marlboro ads are seen by many youngsters to possess a number of desirable qualities. In addition, a significant number of youngsters see these characters as appropriate role models and would like to emulate them....for the youngest children the Camel character was seen as more fun loving and more exciting than the Marlboro man" (Richards 1991, pp. 2-3). Again, the reader is cautioned that both of these statements were written before the research was undertaken.

The Paper before the Study. In the concluding section of the letter to Richards, Dr. DiFranza makes the following statement: "There, the paper is all ready, now all we need is some data"(p. 4). The violation of the ethical standard for scientific research is obvious.

Inflated Results. The DiFranza et al. study (1991) concludes that *Camel* has a 32.8% share of underage smokers. This conclusion emanates from questioning underage smokers to list their favorite cigarette brand after exposing them to six consecutive ads for *Camel*. In an interview (Eisele 1992) Dr. DiFranza admitted, "There was a potential that kids were more likely to say they preferred Camel. That (the question order) was a potential automatic bias."

Non-Reporting of Contradictory Results. In one of his letters to co-authors (Co-Investigator letter 2 1990) Dr. DiFranza states: "When kids are compared to adults under 30, it appears that the ads appeal more to people in their 20s than in their early teens. This was true of the remaining three questions as well....it would appear that we have just disproved our theory that the ads appeal more to kids than adults." At this point he proposes to redefine age categories so that the data will eventually support the theory.

Omission of Subjects. Dr. DiFranza discovered that very few (13 of 167) young children (grades 5 through 8) smoked on a regular basis or intended to begin smoking in the future (Co-Investigator letter 2 1990). In fact, children from grades 5-8 were omitted from the study. This was never revealed in the final paper despite the statement by DiFranza et al. (p. 3152) "that the average age for starter smokers is 13 years." A *JAMA* peer reviewer (Comments To Authors 1991, p. 2) criticized this statement by referring to reports from the Surgeon General in both 1980 and 1989. Those reports found the actual mean age of smoking initiation to be about 18 years. Dr. DiFranza disputed the methodology for the Surgeon General's re-

ports, but never offered the results from his own study of the 167 children cited above.

Avoiding Certain Groups. Dr. DiFranza, in communication to his fellow researchers, says "it would be best to avoid parochial schools because their smoking rates will be so low that the brand preference survey will not be meaningful" (*Old Joe Study Protocol 1992*).

Discussion

The purpose of this paper has been an examination of three articles that appeared in the December, 1991 edition of the *Journal of the American Medical Association*. The reason behind this examination were the calls for major public policy changes regarding advertising, specifically for cigarettes, and demands that a particular advertising campaign be banned. Indicative of this was the accompanying editorial in *JAMA* entitled "Tobacco Marketing: Profiteering From Children." In it, Representative Waxman makes the statement that "the tobacco companies' success at targeting young people is apparent from the data reported in this issue of the journal. Old Joe Camel has demonstrated appeal and recognition among youth"(Waxman 1991, p. 3185). It is noted that the congressman also erroneously labels *Joe Camel* as *Old Joe*.

When five reviewers from differing disciplines were asked to independently evaluate each of the papers, there was major concern raised about the quality of each study. When these reviews were evaluated using the guidelines for social science research, reviewers identified major flaws in all three. Particularly disturbing is the advocacy nature of the research and serious questions concerning reliability and validity. Even more concern is raised by the discovery material unearthed in connection with the DiFranza et al. study (1991). These concerns include use of pre-determined results, non-reporting of controverting data, and "adjusting" the sample to produce the desired results consistent with the researchers' pre-conceived notion about the subject of tobacco advertising and children.

Perhaps of more concern to advertising researchers is the following statement from Professor Kenneth Warner (University of Michigan School of Public Health) a well-known anti-smoking advocate, in discussing the *Joe Camel* campaign: "But the definitive and conclusive proof of the level that would be required by science has never been required by the policy community when it comes to policy about life and death. They go with the best evidence available"

(Kong 1992, p. 43).

What ethical standards for advertising research need to be codified and enforced if we are to have a creditable underpinning to public policy and regulatory formulation? Certainly, there is need for an open discussion of such standards within the discipline. As a journal editor for 15 years (*Journal of Current Issues and Research in Advertising*) this author recognizes that reviewers judiciously examine issues such as validity and reliability in their evaluation of manuscripts, but many of them bring a different sense of rigor to those evaluations. A codification of at least minimal standards would benefit the discipline and authors alike by providing a common benchmark for the reviewing process. However, what is more important is the very serious nature of public policy formulation emanating from such research. The outpouring of demands for the outright banning of the *Joe Camel* advertising campaign, based on the flawed research reported in *JAMA*, is a clear signal of the need for rigor in the design and reporting of research. In brief, researchers need to earn a credible voice in public policy debates by conducting and reporting valid, reliable research.

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