8-1-1977

An Extension of Mcguire's Inoculation Theory T8 Controversial Topics

Michele S. Roberts
Indiana State University

AN EXTENSION OF McGUIRE'S INOCULATION THEORY TO CONTROVERSIAL TOPICS

A Master's Thesis
Presented to
The School of Graduate Studies
Indiana State University
Terre Haute, Indiana

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

---

by

Michele S. Roberts

August 1977

APPROVAL SHEET

The thesis of Michele S. Roberts, Contribution to the School of Graduate Studies, Indiana State University, Series I, Number 1261, under the title An Extension of McGuire's Inoculation Theory to Controversial Topics is approved as counting toward the completion of the Master of Arts Degree in the amount of six semester hours of graduate credit.

Aug. 23, 1977
Date

Dr. R Samuel McAuley
Committee Chairperson

Dr. John Stockwell
Committee Member

Dr. Donald Shields
Committee Member

Aug. 23, 1977
Date

W. Taylor Witham
For the School of Graduate Studies

ABSTRACT

The purpose of this study was to investigate the extension of McGuire's inoculation theory to controversial topics. It was assumed that the employment of controversial topics would reverse the conditions described as obtaining with the employment of cultural truisms. McGuire's first study on the inoculation theory was used as a paradigm, and three hypotheses were investigated:

Hypothesis One: A supportive treatment will be superior to a refutational treatment in conferring resistance to persuasion.

Hypothesis Two: An active participation in developing defenses will increase the amount of immunity conferred.

Hypothesis Three: There is an interactive effect between the type of defense (supportive versus refutational) and the amount of participation (active versus passive): the demands of an active defense will be less detrimental in a supportive defense than in a refutational defense.

To test these hypotheses, pretesting was conducted to identify a topic which produced a mean range closest to 7.5 on a 15-interval attitude scale. On the basis of this pre-

test, 130 S's were chosen from 2 local high schools who rated from 1 to 3 the identified topic. Seven days following the pretest, S's were told that they were participating in an investigation of the relationship between reading and writing skills, and were assigned to 1 of 4 treatment conditions. S's in passive treatment conditions were required to read a prepared essay on the controversial topic and underline the main sentences; S's in active treatment conditions were required to follow a prepared outline and construct an essay on the controversial topic. S's in supportive treatment conditions were exposed to arguments in support of the controversial topic; S's in refutational treatment conditions were exposed to refutations of possible arguments counter to the controversial topic. An attitude measure completed this first session. Two days later, all S's were required to read and underline the main sentences in an essay attacking the controversial topic. A final attitude measure completed the study.

A two-way analysis of variance was used to test the relative effects of active and passive participation in supportive and refutational treatments. This comparison of attack posttest to pretest scores failed to provide support for any of the three hypotheses tested. Failure to demonstrate the predicted effects was probably due to 4 noted weaknesses in the experimental design. It was suggested that future research was necessary to determine whether dif-

ferences between belief maintenance in cultural truisms and controversial topics were obscured by faulty experimental design, or simply do not exist.

ACKNOWLEDGMENT

The completion of this study was dependent upon the expertise and cooperation of many people; in particular, it was due to the contributions made by those who served as members of the thesis committee. I gratefully thank those gentlemen who served as committee members. A committee chairman, however, potentially provides service beyone that of membership. It is with a special sense of appreciation therefore that I thank Dr. R. Samuel Mehrley for both his criticism and his encouragement.

TABLE OF CONTENTS

Page

APPENDIXES

LIST OF TABLES

Chapter 1

INTRODUCTION

The Problem

For more than 2,000 years, countless pages have been devoted to prescriptive and descriptive statements about the persuasion process. The bulk of this literature centers on those situations involving conscious intent by one individual (the persuader) to influence another (the persuadee) through message transmission. Relatively few pages have dealt with inducing resistance to persuasion, or--more explicitly and formally--ways to affect a persuadee's processing of intended persuasive messages so that he or she does not yield to future persuasive attempts. In the previous two decades, a body of theory and research dealing with this largely ignored dimension of the persuasion process has accumulated.[1]

One--perhaps the--major contributor to the study of inducing resistance to persuasion is McGuire.[2] While

---

[1]For a review of much of this research, see Gerald R. Miller and Michael Burgoon, New Techniques of Persuasion (New York: Harper and Row, 1973), pp. 18-44.

[2]For a compilation of McGuire's work on induced resistance to persuasion, see Appendix A.

McGuire's inoculation theory and his supporting program of empirical research have illuminated a number of significant determinants of resistance to persuasion, the theory is explicitly limited in demonstration to "cultural truisms." These are beliefs "that have been maintained in a 'germ free' ideological environment,"[3] that is, "beliefs that are so widely shared within the person's social milieu that he would not have heard them attacked, and indeed, would doubt that an attack were possible."[4] The study reported below attempts to extend McGuire's inoculation theory to controversial topics.

Inoculation Theory and the Paradigm Study

As the name implies, inoculation theory is modeled after the medical process of immunization. Imagine a doctor who wishes to make a patient resistant to a potential viral attack. The doctor may prescribe either of two possible preventative treatments. One treatment is largely "supportive," consisting of vitamins, rest, and exercise. The second treatment is "inoculative," wherein a weakened dosage of the anticipated virus is administered to the patient. The patient overcomes the attenuated dosage, building up defenses which

---

[3]William J. McGuire, "Inducing Resistance to Persuasion: Some Contemporary Approaches," Advances in Experimental Social Psychology, Vol. I, ed. Leonard Berkowitz (New York: Academic Press, 1964), p. 200.

[4]Ibid., p. 201.

make him or her imm-ne to any subsequent, unattenuated viral attack. McGuire conceptualized communication treatments analogous to the medical ones just described.

To confer resistance to a potential persuasive attack, a persuadee may also be exposed to either of two possible preventative treatments. One treatment is largely "supportive," consisting of pre-exposure to arguments supporting the vulnerable belief. The second treatment is "inoculative," wherein a persuadee is exposed to refutations of weakened counterarguments. This treatment, called "refutational," should stimulate the persuadee to build up defenses which make him or her resistant to any subsequent, unattenuated persuasive attack. By analogy, resistance in the medical and communication situations could be conferred through comparable preventative treatments.

The analogy between the medical and communication situations, however, is more extensively drawn than a similarity of preventative treatments. Comparing the supportive and inoculative medical treatments, McGuire and Papageorgis note that "with respect to developing immunity to specific diseases, the inoculation procedure is generally more effective."[5] The superiority of the inoculative treatment is due,

---

[5]William J. McGuire and Demetrios Papageorgis, "The Relative Efficacy of Various Types of Prior Belief-Defense in Producing Immunity Against Persuasion," Journal of Abnormal and Social Psychology, 62, 1961, p. 327.

insofar as the specific virus is concerned, to the patient's residence in a germ-free environment. That is, without an artificial introduction of a weakened dosage of a heretofore unexperienced germ, a patient would be unprepared to resist an impending massive viral attack. Following the medical paradigm, McGuire assumes that the persuadee, like his patient counterpart, also resides in a germ-free environment.

The germ-free environment of the persuadee is maintained through selective exposure. According to Berelson and Steiner, selective exposure describes the tendency for "people . . . to see and hear communications that are favorable or congenial to their predispositions; they are more likely to see and hear congenial communications than neutral or hostile ones . . . ."[6] (It should be noted that selective exposure has been investigated in a wide variety of experimental settings. Unfortunately, the total data are highly inconsistent and inconclusive.[7]) An insulation occurs from this selective exposure which corresponds to a germ-free environment: persuasive attacks are effective because a

---

[6]Bernard Berelson and Gary Steiner, Human Behavior: An Inventory of Scientific Findings (New York: Harcourt Brace and World, 1964), p. 529.

[7]Several reviews of these investigations have been made. See, for example, J. Freedman and D. Sears, "Selective Exposure," Advances in Experimental Social Psychology, Vol. I, ed. Leonard Berkowitz (New York: Academic Press, 1964), pp. 57-97.

persuadee has avoided discrepant material and created a monolithic belief structure.

> As a consequence of the ideological "asceptic" environment that results, the person tends to remain highly confident about his beliefs, but also highly vulnerable to strong counterarguments when forced exposure occurs.[8]

By assuming the operation of selective exposure, McGuire's analogy extends beyond corresponding treatments in the medical and communication situations to include as well conditions underlying those treatments. McGuire can therefore predict that the refutational defense, like the medical inoculative treatment after which it is modeled, will be more effective than a supportive treatment in conferring resistance to persuasion. The inoculation theory maintains that to confer resistance to persuasion a persuadee should be exposed to refutations of counterarguments rather than be exposed to supportive assurances of the veracity of a belief.

The prediction of the superiority of a refutational defense is based on the satisfaction by a refutational defense of the two conditions for a successful preventative treatment which follow from selective exposure. McGuire and Papageorgis suggested that

> living in an ideologically monolithic environment, the person tends to underestimate the vulnerability of his beliefs and the likelihood of their being attacked. Hence, he will have had little motivation or practice in developing supporting arguments to bolster his beliefs

---

[8]McGuire and Papageorgis, op. cit., p. 327.

> or in preparing refutations for the unsuspected counterarguments.[9]

The refutational treatment is superior to the supportive treatment in the supply of both motivation and practice. By repeating the already assumed, a supportive treatment provides further evidence of the unassailability of a belief. Consequently, no motivation is supplied to develop defenses for the belief, and the supportive treatment is probably dismissed as an unimportant belaboring of the obvious. The refutational treatment, in contrast, is crucial in its demonstration of the vulnerability of the belief. The demonstration of vulnerability should suffice to motivate a persuadee to develop defenses. In supplying motivation, the refutational defense should be superior to the supportive.

Motivation, however, is not sufficient to confer resistance to a subsequent attack. Recall that a persuadee convinced that a belief is invulnerable has had no practice in defending that belief. For reasons already suggested, a supportive treatment will probably be ignored. If the persuadee dismisses the supportive arguments, little practice can be obtained from them in developing defenses. The refutational argument, in contrast, should startle the receiver to attention. The criticisms of the counterarguments contained in the refutational treatments will be attended to

---

[9]McGuire and Papageorgis, op. cit., p. 327.

and should provide the persuadee with practice in developing defenses. In the supply of practice, as well as motivation, the refutational defense is superior to the supportive defense.

It should be observed that the lack of practice provides both a necessary condition of and a limiting factor to a successful preventative treatment. If the treatment makes too great a demand on the unprepared persuadee to develop defenses, the persuadee may be so overwhelmingly stunned by the treatment itself that his belief is irreparably damaged. A refutational treatment should therefore provide passive or guided practice in developing defenses. A supportive treatment, on the other hand, need not be limited in practice demands. Requiring a persuadee to actively and independently produce supportive material should not be as hazardous to belief maintenance as would an active exposure to counterarguments. A supportive defense could therefore require active or unguided practice in developing defenses.

The first experiment in McGuire's series of experiments to test the inoculation theory serves as a paradigm. In 1961, McGuire and Papageorgis conducted a study testing three specific hypotheses:

H_1: A refutational treatment will be superior to a supportive treatment in conferring resistance to persuasion.

H_2: An active, unguided participation in developing defenses will reduce the amount of immunity conferred.

> H_3: There is an interactive effect between the type of defense (supportive versus refutational) and the amount or participation (active versus passive): the demands of an active, unguided defense will be less detrimental in a supportive defense than in a refutational defense.[10]

To test these hypotheses, McGuire and Papageorgis had to identify specific beliefs, develop supportive and refutational arguments for those beliefs, and devise persuasive attacks. To remain within the medical analogy, the researchers wished to use beliefs maintained in a "germ-free" environment; cultural truisms were therefore used in the investigation.

Much pretesting was required to identify cultural truisms. On the basis of an opinion survey employing a 15-interval scale--including the category range of "definitely false," "probably false," "uncertain," "probably true," and "definitely true"--four beliefs were selected. Each of these beliefs scored a mean value over 13, and concerned health issues:

> "Everyone should get a chest X ray each year in order to detect any possible tuberculosis symptoms at an early stage"; "The effects of penicillin have been, almost without exception, of great benefit to mankind"; "Most forms of mental illness are not contagious"; "Everyone should brush his teeth after every meal if at all possible."[11]

Once cultural truisms were identified, McGuire and Papageorgis constructed the preventative treatments for making those

---

[10]McGuire and Papageorgis, op. cit., pp. 327-337.

[11]Ibid., p. 330.

truisms resistant to persuasion. Both supportive and refutational treatments were mimeographed messages of approximately 1,000 words. In the supportive condition, the first paragraph

> mentioned that the belief was obviously true but to forestall any possible objections we should familiarize ourselves with the reasons for holding the belief. Two such supportive arguments were then mentioned. In the following two paragraphs, these two supporting arguments were developed in detail with (purportedly) factual information.[12]

Two examples of supportive arguments for the truism which maintained that "Everyone should see his doctor every year" were that "routine checkups catch symptoms in early stages when the illness is most easily cured . . . and that they reduced unnecessary anxiety over health."[13]

In the refutational conditions, the first paragraph

> mentioned that the belief was obviously true but that occasionally one heard misguided attacks on it, and hence it would be wise to know the fallacies in these erroneous counterarguments, two of which were then mentioned. In the following two paragraphs, these two counterarguments were refuted in detail with (purportedly) factual information.[14]

Two examples of refutational arguments against the annual medical check-up truism were that such a practice would "promote hypochondriasis and that it would result in putting off visits to a physician, even when symptoms begin to appear, until one's routine check-up date arrived."[15]

---

[12]William J. McGuire, "The Effectiveness of Supportive and Refutational Defenses in Immunizing and Restoring Beliefs Against Persuasion," Sociometry, 24, 1961, p. 187.

[13]Ibid. [14]Ibid. [15]Ibid.

The last methodological construction involved designing the persuasive attacks. The subsequent attacks, like the message constructions, also consisted of three paragraphs and contained approximately 1,000 words.

> The first paragraph stated that although the belief was commonly held, modern research was beginning to show that it was somewhat fallacious and then mentioned two counterarguments against the belief. The next two paragraphs developed these counterarguments in detail, bolstering them with (purportedly) factual information.[16]

McGuire and Papageorgis administered the experiment as follows: 130 college students were told that they were participating in a study investigating the relationship between reading and writing skills. Two sessions were held; the first session contained the preventative treatments, while the second session contained the persuasive attack.

During the first session each S was assigned to some experimental treatment of each of the 4 cultural truisms. McGuire and Papageorgis manipulated two independent variables: the amount of participation in the defense, and the type of defense. The amount of participation in the defense was given a fourfold treatment. A reading condition was subdivided into a passive treatment wherein S's merely read material silently, and an active treatment wherein S's read and underlined the crucial sentence in each paragraph of the

---

[16]McGuire, op. cit., p. 187.

supplied material. A writing condition was subdivided into a passive treatment wherein S's were provided with an outline summarizing 4 defensive arguments that could be used on their assignment to write an essay defending a truism, and an active treatment wherein S's were given the same assignment while not provided with a guiding outline.

The second independent variable was the type of defensive treatment. Half of the S's were given a supportive treatment which contained arguments supporting the cultural truism. The other half of the S's were given a refutational treatment which contained possible counterarguments and refutations of those counterarguments. In the reading conditions the S's were given

> 1,000-word, five-paragraph essays, each essay presenting four supporting arguments, or mentioning and then refuting four counterarguments. In the writing-from-outline participation condition, the two types of defense involved presenting the subject either with one-sentence synopses of each of four supporting arguments or with four two-sentence synopses, each mentioning a counterargument and an argument refuting it. In the writing-with-out-outline participation condition, the subjects in the supportive conditions were instructed to write an essay giving arguments in support of the truism, and those in the refutational, an essay mentioning and refuting possible counterarguments against the truism.[17]

An opinion measure completed the first session.

The second session was conducted 48 hours later. Each S was presented with "three 1,000-word essays containing strong counterarguments against each of the two previous

---

[17]McGuire and Papageorgis, op. cit., p. 329.

defenses, and one additional belief."[18] After the five minutes allowed for the reading of each essay, the S's completed an irrelevant multiple-choice test on the contents. A final opinion measure completed the study.

McGuire and Papageorgis found support for 2 of the 3 hypotheses. Subjects who were given neither persuasive communication nor immunization believed strongly in the cultural truism, as might be expected. The attitudes of S's who had received the persuasive communication but not the immunization were strongly influenced. The S's in the supportive conditions, which consisted of arguments for the truism, were also left unprepared to fight the attack. Supportive "immunization" was virtually ineffective (the means of 7.23 and 7.55 are not significantly higher than the 6.64 mean of the non-immunization condition). Refutational immunization was quite effective, however. When S's were aware that there were counterarguments and knew what those counterarguments were, they were not strongly influenced by the attack. In regard to cultural truisms, at least, a persuadee should be inoculated against persuasive attacks.

Rationale and Hypotheses

What should be done, however, in the case of controversial topics? It will be assumed in this investigation

---

[18]McGuire and Papageorgis, op. cit., p. 329.

that in the case of controversial topics, the persuadee resides in a germ-ridden environment. Imagine that a doctor wishes to insure that his patient will not succumb to a subsequent attack by germs with which this patient has already been in contact. Which preventative treatment should the doctor prescribe: a supportive treatment or an inoculation?

In the case of cultural truisms, McGuire's prediction of the superiority of a refutational defense was based on its satisfaction of two conditions necessary for a successful preventative treatment. McGuire reasoned that a refutational defense would provide a persuadee with needed practice and motivation, while the supportive treatment would not satisfy those conditions. In the case of controversial beliefs, however, different conditions for a successful preventative treatment should exist.

McGuire assumed that persuadees are convinced of the invulnerability of cultural truisms. It was this "information naivete" that required the motivation provided by a refutational treatment and predicted that a supportive treatment would be dismissed as belaboring the obvious. In the case of controversial topics, however, the persuadee should be aware that his or her beliefs are assailable. Because of this "information sophistication" the refutational treatment should not startle the persuadee to attention, as was apparently required in the case of cultural truisms. Moreover, McGuire and Papageorgis note, and Cohen repeats, that the

ambiguous, rather treatening initial content of the refutational treatment may produce an avoidance response so that the effect of the refutational treatment would be lost.[19] Because of the loss of any benefit to attention and the possibility of an avoidance response, a supportive treatment should predictably provide the superior defense for a controversial belief.

Secondly, McGuire assumed that persuadees are unpracticed in defending cultural truisms. It was this lack of practice which limited the amount of participation to be demanded of the persuadee and predicted that an active, unguided participation in developing defenses would reduce the amount of immunity conferred. With controversial topics, however, McGuire and Papageorgis note that the reverse should obtain.[20] The persuadee has already had some practice in defending his or her belief, so the threat of receiving an overwhelming treatment is not as critical. Greater demands may be made of the persuadee in an attempt to produce stronger immunity. Since there will not be the complete initial agreement with a controversial topic that exists with a cultural truism, the persuadee may benefit with increased internalization resulting from an active participation. In addition, McGuire and Papgeorgis argue that previous practice in

---

[19]McGuire and Papageorgis, op. cit., p. 333; Arthur R. Cohen, Attitude Change and Social Influence (New York: Basic Books, 1964), p. 128.

[20]McGuire and Papageorgis, op. cit., p. 335.

developing defenses would place persuadees on a later segment of a learning curve, so that the persuadees would benefit from a positive relationship between active participation and the amount of learning.[21] Assumedly, that persuadee who better mastered defensive material would be more resistant to persuasive attack. Hence, for controversial topics, an active, unguided participation in developing defenses would increase the amount of immunity conferred.

Lastly, McGuire and Papageorgis assumed an interactive effect between the amount of participation demanded of the persuadee and the type of defensive treatment employed. The lack of practice in developing defenses could render an active, refutational treatment overwhelming, whereas an active, supportive treatment would be less detrimental. With controversial topics, this effect should still be observed. The supportive treatment offers a potential for learning which should increase with the amount of participation. The greater the participation demanded in a refutational treatment, however, the more threatening this treatment should seem. An active, refutational treatment would therefore facilitate an avoidance reaction or run the risk of overwhelming the persuadee. Either effect would be detrimental to the desired immunity. For controversial topics as well as for cultural

---

[21]McGuire and Papageorgis, op. cit., p. 335.

truisms, an active, unguided defense will be less detrimental in a supportive defense than in a refutational defense.

In the case of controversial topics, such reasoning leads to the following hypotheses:

Hypothesis One: A supportive treatment will be superior to a refutational treatment in conferring resistance to persuasion.

Hypothesis Two: An active participation in developing defenses will increase the amount of immunity conferred.

Hypothesis Three: There is an interactive effect between the type of defense (supportive versus refutational) and the amount of participation (active versus passive): the demands of an active defense will be less detrimental in a supportive defense than in a refutational defense.

Chapter 2

METHODS

Subjects

S's in this study were 120 students chosen from two local high schools.

Design of the Experiment

A two-way analysis of variance was used to test the relative effects of active and passive participation in supportive and refutational treatments on conferring controversial topics resistant to a persuasive attack. Table 1 provides a shorthand description of these features.

Table 1

A Description of the Experimental Design

	Type of Defense	
Amount of Participation	Supportive	Refutational
Active		
Passive		

Independent Variables

Two independent variables were manipulated in this investigation:

1. Amount of participation in the defense. This variable was dichotomized as passive participation and active participation. In the passive participation conditions, S's were given an approximately 600-word, five-paragraph essay defending the controversial topic. The first paragraph summarized four arguments, and each of the following paragraphs developed one of these arguments in detail. S's were told simply to read the material and underline the main sentence of each paragraph. In the active participation conditions, an outline was given containing an introductory paragraph and four paragraph headings. S's were instructed to follow the provided outline and complete an approximately 600-word, five-paragraph essay defending the controversial topic.

2. Type of defense. Two types of defensive treatments were employed, labelled supportive and refutational. The supportive defenses involved presenting the S's with arguments which supported the controversial topic; the refutational defenses involved exposure to possible counterarguments against the truism together with refutations of those counterarguments. In the passive participation conditions, both types of defenses took the form of approximately 600-word, five-paragraph essays. The supportive treatments

developed four arguments in support of the controversial topic; the refutational treatment mentioned four possible arguments counter to the controversial topic and then refuted each of these counterarguments. In the active participation conditions, S's in the supportive defenses were instructed to complete an outlined essay giving arguments in support of the truism, while S's in the refutational defenses were instructed to complete an outlined essay mentioning and refuting possible counterarguments against the truism.

Dependent Variable

The independent variable in this study was the amount of attitude change on a measuring instrument.

Issue Selection

A survey of high school student opinion was administered to different S's from those serving in the experiment. From this survey, 5 issues were chosen as obtaining the most varied responses. Five propositions concerning each of the 5 issues were prepared as an attitude questionnaire.

On the questionnaire, the S's indicated their beliefs in the propositions by marking an "X" in the appropriate space on a 15-interval scale that looked as follows:

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

The S's were told to mark the "X" in the space which best indicated their belief about the truth of the proposition.

The intent was to employ as controversial topics those issues which, as closely as possible, could be antithetically described by McGuire's theoretical definition of cultural truisms:

> "Cultural truisms" are beliefs that are so widely shared within the person's social milieu that he would not have heard them attacked, and indeed, would doubt that an attack were possible.[1]

To select cultural truisms, McGuire and Papageorgis established the criteria of extremeness and homogeneity, operationally defining cultural truisms in relation to the 15-interval scale described above. If the intervals were scaled from 1 to 15 moving towards the right, the 4 issues employed by McGuire and Papageorgis as cultural truisms obtained a mean belief over 13, with the mode at 15.[2]

Reversing McGuire's definition of cultural truisms, controversial beliefs were defined as those beliefs which a person supports while aware that an attack on the beliefs was possible, probably having heard such an attack. To select controversial beliefs, the criteria of heterogeneity and extremeness were used. The criterion of heterogeneity was

---

[1]William J. McGuire and Demetrios Papageorgis, "The Relative Efficacy of Various Types of Prior Belief-Defenses in Producing Immunity Against Persuasion," Journal of Abnormal and Social Psychology, 62, 1961, p. 327.

[2]McGuire and Papageorgis, op. cit., p. 330.

satisfied by employing, from among the 25 propositions included on the opinion questionnaire, that proposition which most closely resulted in a mean range of 7.5 on the 15-interval scale. To satisfy the criterion of extremeness, those students were selected as S's who rated the chosen proposition most closely to 1 on the 15-interval scale. The proposition most closely meeting the established criterion was "Decriminalization of Marijuana," which obtained a mean range of 7.6. The questionnaire is presented in Appendix B.

General Procedures

Twelve sections of high school speech courses from two local high schools were administered a pretest questionnaire, ostensibly to solicit student opinion to possible issues to be used in a class project. On the basis of this questionnaire, 130 students were chosen who rated between 1 and 3 a belief which obtained an overall mean range of 7.6 on a 15-interval scale. The 130 S's were then grouped by class period into 1 of the 4 randomly designated experimental conditions.

Seven days following the pretest questionnaire, the S's were identified and told that on the basis of high school records, they had been chosen to participate in a two-session study investigating the relationship between reading and writing skills.

First session. The experimenter greeted the students, introduced herself, and thanked the students for participating in an important experiment to investigate the relationship between reading and writing skills.

1. Passive Conditions. The experimenter provided the students with a mimeographed, approximately 600-word, five-paragraph essay defending the controversial topic. The students were instructed to read the essay and underline the main clause in each paragraph. The supportive defense contained a five-paragraph essay supporting the controversial topic (see Appendix C). The refutational defense contained a five-paragraph essay mentioning four arguments counter to the controversial topic, and then refuting each counterargument in detail (see Appendix D).

2. Active Conditions. The experimenter provided a mimeographed outline and instructed the students to write an essay giving arguments in support of the controversial topic. The outline was divided to contain an introductory paragraph and four headings. In the supportive defenses, students were told to follow the outline by elaborating on the four headings which supported the controversial topic (see Appendix E). In the refutational defenses students were told to follow the outline and refute the four possible counterarguments to the controversial topic contained in the headings (see Appendix F).

Forty minutes were provided for all conditions. The students' final task in the first session was to complete an attitude questionnaire designed to measure strength of belief in the controversial topic. The S's were told that the questionnaire was designed to evaluate the first session of the experiment (see Appendix G). The experimenter reminded the S's of the next meeting, thanked them, and dismissed them.

Second session. The S's took part 2 days later in a second session, in which they were presented with an approximately 500-word essay attacking the controversial topic (see Appendix H). Following the twenty minutes permitted to read the essay, a 15-question (irrelevant) multiple choice test was given over the essay. Finally, the S's were given a questionnaire ostensibly designed to evaluate the experimental sessions, making it important, therefore, to indicate personal feelings regardless of the material contained in any of the essays (see Appendix I).

At the end of the second session considerable effort was expended to inform the S's of the nature of the study and of the deceits used. Particular stress was given to the fact that the treatment and attack messages had both been constructed for propaganda purposes and that no weight should be given to any argument simply because it had been included in one of these propaganda messages. The S's were heartily thanked.

Chapter 3

RESULTS

TEST OF THE HYPOTHESES

The three hypotheses of this study were tested by use of a two-factor analysis of variance at an employed significance level of .05. Data used for analyses testing the hypotheses were the mean pretest to attack attitude change scores of the experimental S's.

Hypothesis I

The first hypothesis predicted that a pretreatment which consists of arguments supporting the controversial issue (supportive defense) will differ in inducing resistance to persuasion from a pretreatment which first attacks the belief and then refutes the attack (refutational defense); specifically:

Hypothesis One: A supportive treatment will be superior to a refutational treatment in conferring resistance to persuasion.

Table 2 indicates the mean pretest, attack posttest, and attitude change scores for the experimental groups. Table 3 presents a summary of the two-factor analysis of variance. The results of this analysis indicate that Hypothesis I is not supported.

Table 2

Means and Standard Deviations of Pretest, Change from Pretest to Treatment Posttest, and Change from Pretest to Attack Posttest

Condition	N	Pretest		Change from pretest to treatment posttest		Change from pretest to attack posttest	
		$\bar{X}$	s	$\bar{X}$	s	$\bar{X}$	s
Supportive active	30	1.666	.660	2.533	2.661	4.466	1.995
Supportive passive	30	1.666	.710	1.433	1.381	1.933	2.545
Refutational active	30	1.666	.710	2.000	2.117	4.533	2.208
Refutational passive	30	1.666	.710	1.700	1.950	3.166	2.198

Table 3

Summary of Two-Factor Analysis of Variance of Attitude Change Scores Between the Pretest and the Attack

Source of variation	ss	df	ms	F
Type of defense (A)	12.675	1.000	12.675	2.511
Amount of Participation (B)	114.075	1.000	114.075	22.607
Interaction (AB)	9.725	1.000	9.725	1.927
Error	585.450	116.000	5.046	
Total	721.925	119.000		

Hypothesis II

The second hypothesis predicted that when S's are required to participate in the defense of a controversial topic (active participation), they tend to change their attitudes less than when they are required to remain behaviorally passive (passive participation); specifically:

Hypothesis Two: An active participation in developing defenses will increase the amount of immunity conferred.

The results of the two-factor analysis of variance (Table 3) indicates a significant amount of participation main effect. However, examination of Table 2 reveals that this significant main effect was in the opposite direction from that predicted by the hypothesis; that is, passive participation produced significantly greater resistance to attitude change than active participation. Thus, Hypothesis II is not supported.

Hypothesis III

The final hypothesis of this study predicted a relationship between the two independent variables, specifically:

Hypothesis Three: There is an interactive effect between the type of defense (supportive versus refutational) and the amount of participation (active versus passive): the demands of an active defense will be less detrimental in a supportive defense than in a refutational defense.

The results of the two-factor analysis of variance (Table 3) indicates that Hypothesis III is not supported.

Thus, the three major hypotheses of this investigation were not supported.

Chapter 4

DISCUSSION

Conclusions

This study does not provide support for the extension of McGuire's inoculation theory to controversial topics. This chapter advances explanations for the failure to confirm the hypothesized extrapolation and offers a suggestion for future research.

Exclusive of the efficacy of the theory itself, failure to demonstrate the predicted effects is probably due in large measure to four major methodological weaknesses in the experiment. First, it is possible that extraneous history may have confounded the experimental data. During the course of the experiment, several news releases occurred concerning the issue employed as a controversial topic. It is not known what effects, if any, this extraneous source of influence might have had on the S's serving in the various experimental treatments. The inclusion of a control group would have provided an indication of these extraneous effects.

Second, it was necessary for the same experimenter to conduct all of the sessions, knowing which treatment was being administered. Moreover, half of the treatments were given at one high school, another half at a second school.

These procedures could have contributed to the type of variance observed. Ideally, two experimental conditions should be met to control for this potential source of variance. S's should be drawn from the same high school. In addition, several experimenters should be used to conduct the experiment. These experimenters should be unaware of the theoretical model being investigated, and randomly assigned to the various treatment groups.

A third confounding source in the experimental design may have been the subject population. S's in the experiment were high school students, most of whom are monitored by parents, teachers, and other authority figures. It is not known, therefore, what access these S's typically have to information sources concerning controversial topics; nor was it ascertained how plausibly or credibly the propaganda materials used in the study were received. A study using S's drawn from an older, more independent population would perhaps produce different results. Moreover, the propaganda materials could be evaluated on the dimensions of credibility and plausibility by S's differing from those serving in the experiment.

Probably most damaging to the experimental design, however, was the compressed time in which the experiment was conducted. Only 7 days separated the pretest questionnaire from the treatment posttest. Although none of the S's expressed any suspicions of the experimental presentations,

the brevity of the time intervals may have created a topic sensitization, thereby diminishing any effects otherwise created by the manipulated variables. At least 2 weeks should be observed between the pretest and the treatment to minimize possible topic sensitization.

These methodological weaknesses restrict any conclusions to be drawn from this study. Noting these weaknesses, however, several observations can be made from the experimental data.

A Suggestion for Future Research

It does not appear that McGuire's inoculation theory can be extrapolated to controversial topics by reversing the requirements for cultural truisms. A reference to Table 2 (Chapter 3) shows that following the exposure to information contained in each defensive treatment, intensity of belief in the controversial topic was lessened. This erosion suggests that belief intensity might have been weakened by learning of the vulnerability of the belief, a situation comparable to the informationally "naive" believer in cultural truisms. Differences between belief maintenance in cultural truisms and belief maintenance in controversial topics were either obscured by faulty experimental design, or did not exist.

If differences in belief maintenance between cultural truisms and controversial topics do not exist, then a replication of this study with tighter methodological con-

trols would predictably produce results similar to those found in the studies conducted by McGuire. That is, for all beliefs, a refutational treatment would be superior to a supportive treatment in conferring resistance to persuasion.

Similarly, if belief maintenance is comparable in both cultural truisms and controversial topics, then the results obtained for Hypothesis II would be expected. If S's had neither practice in nor motivation to defend controversial topics, an active participation in developing defenses would predictably lower the amount of immunity conferred.

The predicted interactive effect between the type of defense (refutational versus supportive) and the amount of participation (active versus passive) was not reversed for controversial topics. The results obtained in this experiment did occur in the predicted direction, although not at the assigned level of significance.

The results obtained for all three hypotheses in this study, therefore, could be due to methodological weaknesses, or to isomorphic belief maintenance between cultural truisms and controversial topics. Further research is needed to distinguish between these alternative interpretations. If differences do not exist between the belief maintenance of cultural truisms and the belief maintenance of controversial topics, then McGuire's model can be extended as a paradigm for all attempts at induced resistance to persuasion. If

differences between the belief maintenance of cultural truisms and the belief maintenance of controversial topics do exist, however, a theoretical model comparable to McGuire's model for cultural truisms is needed to explain the maintenance of controversial topics and predict successful defenses against persuasive attacks. In an age replete with persuasive appeals, the extension of McGuire's model or the development of a comparable model for controversial topics seems crucial. As Miller and Burgoon note,

> These problems and possibilities should be of interest to teachers, critics, and behavioral scientists concerned with persuasive communication. The persuasion literature has long been filled with "offensive game plans" that tell how to change a person, regardless of whether the change is good for him. It seems to us that in a time marked by a veritable explosion of persuasive communication, people need added resources to defend themselves against the barrage of persuasive attacks they face daily. Indeed, students of persuasion need to spend as much time and energy on the study of persuasive consumption as they have devoted to the study of persuasive production in the past.[1]

Summary

The extension of the inoculation theory to controversial topics was not supported by this study. Failure to demonstrate the predicted effects was probably due to 4 methodological weaknesses: First, extraneous history may have confounded the data. Secondly, the same experimenter conducted all of the sessions, knowing which treatment was

---

[1]Gerald R. Miller and Michael Burgoon, New Techniques of Persuasion (New York: Harper and Row, 1973), p. 43.

being administered. In addition, the treatments were conducted at two different high schools. These procedures may have produced the observed effects. A third confounding source may have been the subject population. Through the control of authority figures, high school students may have restricted access to information. As a result, it is not known how plausibly or credibly the S's received the propaganda materials used in the study. Probably most damaging to the experimental design, however, was the compressed time in which the experiment was conducted. The brevity of time intervals may have diminished any effects otherwise created by the manipulated variables. These methodological weaknesses make it impossible to conclude whether differences between belief maintenance in cultural truisms and controversial topics were obscured by faulty experimental design, or simply did not exist.

It was suggested, therefore, that future research is needed to identify which interpretation of the experimental effects observed here is valid.

REFERENCES

REFERENCES

Berelson, Bernard, and Gary Steiner. Human Behavior: An Inventory of Scientific Findings. New York: Harcourt, Brace and World, 1964.

Cohen, Arthur. Attitude Change and Social Influence. New York: Basic Books, 1964.

Freedman, J., and D. Sears. Selective exposure. In I. Berkowitz (Ed.), Advances in Experimental Social Psychology, Vol. I. New York: Academic Press, 1964.

McGuire, William. Resistance to persuasion confirmed by active and passive prior refutation of the same and alternative counterarguments. Journal of Abnormal and Social Psychology, 1961, 63, 326-332.

--------. The effectiveness of supportive and refutational defenses in immunizing and restoring beliefs against persuasion. Sociometry, 1961, 24, 184-197.

--------. Persistence of the resistance to persuasion induced by various types of prior belief defenses. Journal of Abnormal and Social Psychology, 1962, 64, 241-248.

--------. Immunization Against Persuasion. New York: Department of Social Psychology, Columbia University, 1963. (Mimeo)

--------. Inducing resistance to persuasion: some contemporary approaches. In I. Berkowitz (Ed.), Advances in Experimental Social Psychology, Vol. I. New York: Academic Press, 1964.

McGuire, William, and Demetrios Papageorgis. The relative efficacy of various types of prior belief-defense in producing immunity against persuasion. Journal of Abnormal and Social Psychology, 1961, 62, 327-337.

--------. Effectiveness of forewarning in developing resistance to persuasion. Public Opinion Quarterly, 1962, 26, 24-34.

Miller, Gerald, and Michael Burgoon. New Techniques of Persuasion. New York: Harper and Row, 1973.

APPENDIXES

APPENDIX A

McGUIRE'S RESEARCH ON INDUCED RESISTANCE TO PERSUASION

McGuire, William. Resistance to persuasion confirmed by active and passive prior refutation of the same and alternative counterarguments. Journal of Abnormal and Social Psychology, 1961, 63, 326-332.

--------. The effectiveness of supportive and refutational defenses in immunizing and restoring beliefs against persuasion. Sociometry, 1961, 63, 326-332.

--------. Persistence of the resistance to persuasion induced by various types of prior belief defenses, Journal of Abnormal and Social Psychology, 1962, 64, 241-248.

--------. Immunization Against Persuasion. New York: Department of Social Psychology, Columbia University, 1963. (Mimeo)

--------. Inducing resistance to persuasion: some contemporary approaches. In I. Berkowitz (Ed.), Advances in Experimental Social Psychology, Vol. I. New York: Academic Press, 1964.

McGuire, William, and Demetrios Papageorgis. The relative efficacy of various types of prior belief-defense in producing immunity against persuasion. Journal of Abnormal and Social Psychology, 1961, 62, 327-337.

--------. Effectiveness of forewarning in developing resistance to persuasion. Public Opinion Quarterly, 1962, 26, 24-34.

APPENDIX B

PRETEST QUESTIONNAIRE

1. A woman has the right to make any decisions that affect her body, including any decision regarding pregnancy.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

2. The government should finance abortions for women too poor to afford them.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

3. Abortion should be legal under all conditions.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

4. The natural father of an unborn child has a right to influence any decision concerning the child, including abortion.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

5. Abortions should be legal only in those situations wherein the child would be born with serious defects, or the mother's life would be endangered by pregnancy or by childbirth, or in cases of rape.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

6. The ERA should be ratified by all states.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

7. Under present social and legal conditions, women are discriminated against.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

8. If a man and a woman perform exactly the same job, they should receive exactly the same pay.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

9. Equal amounts of funds should be provided for both male and female high school sports programs.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

10. The Woman's Liberation Movement has produced positive social changes.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

11. Marijuana should be legalized.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

12. Marijuana should be decriminalized.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

13. More could be done by our own government to reduce drug traffic.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

14. Drug pushers who are apprehended should receive stiffer penalties than drug users who are apprehended.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

15. Moderate marijuana use is less harmful than moderate alcohol use.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

16. There is really no gas shortage.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

17. More money should be spent to develop nuclear energy supplies.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

18. If the price of gas were deregulated, the energy crisis would be lessened.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

19. America should become less dependent on foreign oil supplies.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

20. Industries should be encouraged to switch to coal as an energy source.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

21. The American public has a right to know the activities of its government.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

22. The President has the right to withhold information to protect national security.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

23. There is not enough privacy in this country.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

24. There should be some elected body to monitor the activities of the FBI and CIA.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

25. Journalists should be prosecuted for not revealing the sources of "leaked" information.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

APPENDIX C

PASSIVE SUPPORTIVE DEFENSE

Every day more experts produce intellectual research which indicates the harmful effects, both long-range and short-range, of the use of marijuana. This strong evidence makes it increasingly difficult for people to argue that the use of marijuana should be decriminalized. Men of science have come to the point where they argue against the decriminalization for three important reasons: (1) physical, (2) mental, and (3) social. Let's look at each of these arguments in greater detail.

First, the physical. Reliable evidence states that people who use marijuana are more likely to fall victim to infectious disease. The drug interferes with the capacity of the body's white blood cells to fight disease, resulting in forty percent less potential immune response. Secondly, valid research indicates that smoking marijuana can cause chromosome damage. One researcher (Dr. Stenchever), has noted that even for subjects who smoked only once a week or less, chromosome breakage was three times greater than for a control group of non-users. Even the infrequent marijuana smoker, therefore, can damage the chromosome heritage of future generations.

Now let's look at the second argument, the mental. Frankly, there is no evidence to support the belief that if

a person smokes marijuana, his body demands that this continue. But this is just one form of dependency. Consider the person who begins to smoke in predictable patterns--who lights a joint whenever he or she is nervous, or uptight, or under pressure. Surely these patterned dependencies should not be encouraged. There is a second mental side-effect to smoking marijuana. It would be unusual if many of you reading this essay have not seen someone stoned or have not been stoned yourself. It could go without saying that you have firsthand firsthand knowledge that marijuana smokers show signs of decreased judgment. Maybe a comparison is in order: since the overwhelming majority of fatal automobile accidents are caused by individuals whose judgments have been impaired by alcohol, it follows logically that the decriminalization of marijuana would significantly increase the number of people with impaired judgment behind the steering wheel of a car. The decriminalization of marijuana, and this is no overstatement, would most certainly turn a driver's license into a license to kill.

Thirdly, consider the argument of social consequences. There is a wealth of statistical data which shows that accessibility increases acceptability. Simply stated, this means that if booze is made available, more people will drink it. If cigarettes are sold everywhere, more people will smoke. If junk foods are sold in school cafeterias, students will eat more junk foods. Now, doesn't it follow that if marijuana

is decriminalized, if one need not worry about harsh penalties for its use or possession, then certainly more people will be encouraged to use the drug? Moreover, although it has yet to be shown that there is a direct relationship between the use of marijuana and the "graduation" to harder drugs, there are reliable data which indicate that marijuana frequently leads to experimentation with hard drugs. The reason this is dangerous is that the frequent marijuana user might decide to "do" heroin. As we all know, it takes but a limited number of experiences with heroin to result in complete addiction.

These, then, are three sound, thoroughly researched arguments against the decriminalization of marijuana. There are definite physical reasons why marijuana should not be decriminalized. People who smoke grass are more likely to succumb to infectious disease and suffer chromosome damage. There are mental side-effects associated with marijuana. Users of the drug can develop mental dependencies, and do develop impaired judgment. Social consequences can be predicted from decriminalization: the use of marijuana can be expected to increase, as can experimentation with harder drugs. Each of these arguments, in and of itself, is strong enough to quiet those who would allow the possession and use of this drug to be no more serious than a parking ticket. But the three arguments combined mount an overwhelming case against any attempts to decriminalize this narcotic.

APPENDIX D

PASSIVE REFUTATIONAL DEFENSE

There are four states, and more to come, that have decriminalized marijuana. This means that already in four states, and in those states which may soon follow, the possesion and use of marijuana will no longer result in heavy fines or imprisonment. Three arguments are commonly offered in support of decriminalization: (1) No harmful physical effects of smoking marijuana have been proven. (2) There are no harmful mental side-effects associated with marijuana use. (3) Decriminalization will not have any social consequences. An examination of these arguments, however, shows that each is false. Let's consider them one at a time.

First, the physical. The marijuana lobby claims that marijuana should be decriminalized because no harmful effects of smoking marijuana have been demonstrated. This is simply not true. It is true that a few studies have questioned the link between marijuana use and harmful physical effects, but the overwhelming majority of studies conducted support the conclusion of the now famous Stenchever Report: the use of marijuana, even as infrequently as once a week or less, resulted in three times the chromosome breakage observed in people who do not smoke. Marijuana does result, then, in physical harm. Despite this evidence,

marijuana supporters claim that "If it's your body, you can do what you want with it." On the surface, this argument makes sense, but it has one serious flaw: since marijuana can result in chromosome breakage, a marijuana smoker may jeopardize more than his or her own life. Thus, the same people who demand free choice for themselves, are denying free choice to a yet unborn child who will have no say about the possibility of birth defects, the possibility of brain damage, or the possibility of significantly diminished health.

A second argument presented for decriminalization is that no mental side-effects are associated with marijuana. Again, this is simply not true. It would be unusual if many of you reading this essay have not seen someone stoned or have not been stoned yourself. It could go without saying that you have firsthand knowledge that marijuana smokers show signs of decreased judgment. Decriminalization would legally provide for societal members to function with impaired judgment. Maybe a comparison is in order: since the overwhelming majority of fatal automobile accidents are caused by individuals whose judgment has been impaired by alcohol, it follows logically that the decriminalization of marijuana would significantly increase the number of people with impaired judgment behind the steering wheel of a car. There are mental side-effects of marijuana use; and what's more, these side-effects may result in fatal consequences.

That there will be no social effects of decriminalization is a third argument presented by marijuana supporters. It is claimed that decriminalization will not result in an increased use of marijuana, but all available evidence is to the contrary. Accessibility seems to increase acceptability. Simply stated, this means that if booze is made available, more people will drink it. If cigarettes are sold everywhere, more people will smoke. If junk foods are sold in school cafeterias, students will eat more junk foods. Now, doesn't it follow that if marijuana is decriminalized, if one need not worry about harsh penalties for its use of possession, then certainly more people will be encouraged to use the drug?

The arguments presented for the decriminalization of marijuana, then, are not sound. There are proven harmful physical effects of smoking marijuana. Nor can it be claimed that smoking is a matter of free personal choice when chromosome research demonstrates that future generations may be affected. The marijuana smoker also experiences mental side-effects: judgment is impaired by the narcotic. Society can ill afford to legalize the functioning of judgment-impaired individuals. There are also social consequences to be expected from the decriminalization of marijuana. The increased accessibility of the drug should result in increased acceptability--the use of marijuana will increase. The claims of the marijuana lobby are therefore easily refuted. Avail-

able evidence indisputably supports the opposite position: marijuana should not be decriminalized.

APPENDIX E

ACTIVE SUPPORTIVE DEFENSE

Every day more experts produce intellectual research which indicates the harmful effects, both long-range and short-range, of the use of marijuana. This strong evidence makes it increasingly difficult for people to argue that the use of marijuana should be decriminalized. Men of science have come to the point where they argue against the decriminalization for three important reasons: 1. physical, 2. mental, and 3. social. Let's look at each of these arguments in greater detail.

First, the physical.

Now let's look at the second argument, the mental.

Thirdly, consider the argument of social consequences.

Each of these arguments, in and of itself, is strong enough to quiet those who would allow the possession and use of this drug to be no more serious than a parking ticket. But the three arguments combined mount an overwhelming case against any attempts to decriminalize this narcotic.

APPENDIX F

ACTIVE REFUTATIONAL DEFENSE

There are four states, and more to come, that have decriminalized marijuana. This means that already in four states, and in those states which may soon follow, the possession and use of marijuana will no longer result in heavy fines or imprisonment. Three arguments are commonly offered in support of decriminalization: 1. No harmful physical effects of smoking marijuana have been proven. 2. There are no harmful mental side-effects associated with marijuana use. 3. Decriminalization will not have any social consequences. An examination of these arguments, however, shows that each is false. Let's consider them one at a time.

First, the physical.

A second argument presented for decriminalization is that no mental side-effects are associated with marijuana.

That there will be so social effects of decriminalization is a third argument presented by marijuana supporters.

The arguments presented for the decriminalization of marijuana are therefore unsound and easily refuted. Available evidence indisputably supports the following position: marijuana should not be decriminalized.

APPENDIX G

TREATMENT POSTTEST

1. Some researchers claim that the decriminalization of marijuana will result in increased automobile accidents.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

2. The author of this essay was in favor of decriminalizing marijuana.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

3. It would be better to decriminalize marijuana than to legalize if altogether.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

4. Some states have already decriminalized marijuana.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

5. More money should be spent on research to investigate the effects of marijuana use on chromosomes.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

6. Marijuana should be decriminalized.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

7. While the use of marijuana does not necessarily cause experimentation with other drugs, marijuana use can contribute to experimentation with other drugs.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

8. If marijuana is decriminalized, more people will try it.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

9. The organization of this essay was clear to follow.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

10. The directions during this first experimental session were easy to understand.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

APPENDIX H

ATTACK MESSAGE

This year, the United States Senate will vote on legislation to decriminalize marijuana. The proposed bill will reduce the penalty and use of one ounce of marijuana from a felony to a misdemeanor. Experts who will testify at Senate Hearings on this bill will present at least three important reasons why decriminalization should be passed: (1) physical, (2) mental, and (3) social. Let's look at each reason in detail.

First, experts will produce conclusive scientific evidence that marijuana does not result in physical harm to the typical smoker. Over the years, it has been claimed that marijuana causes a loss of motivation, causes brain damage, and causes chromosome breakage. The Department of Health, Education, and Welfare (HEW), however, has conducted studies which disprove all of these claims. In 1972, the annual HEW Report on Marijuana and Health noted that smoking marijuana does not cause any loss of motivation. In fact, many people, especially writers and performers, claim that marijuana use improves their productivity. In 1974, a study conducted by the Le Dain Commission found no evidence of brain damage from smoking grass. Lastly, in 1971, the President of the American Medical Association (AMA) reported that no proof existed to

date that marijuana caused chromosome damage. The Stenchever Report has noted some chromosome breakage in marijuana smokers, but, as the President of the AMA noted, chromosome breaks do not result in birth defects. Many common substances, such as aspirin or caffeine, cause chromosome breaks. Also, the AMA President noted that the Stenchever study had obtained no information about the condition of the subjects before they used marijuana. Thus, the possibility that the subjects had previously used other substances was not ruled out. Most damaging to the claim that marijuana causes physical harm is the fact that in all studies, rats or human subjects were given uncommonly large amounts of grass to smoke. If no conclusive evidence exists that large amounts of marijuana result in physical harm, then how can it be logically claimed that normal marijuana use if harmful?

Secondly, experts will show that there are no mental side-effects associated with marijuana. Marijuana is not addicting. Moreover, a study reported in the Journal of the American Medical Association specifically disproved the notion that marijuana users develop an interest in other drugs. Therefore, it cannot be claimed that marijuana causes mental side-effects.

But the strongest reason for decriminalizing marijuana will come from the positive social effects that will follow. Right now, our courts and jails are overcrowded with criminals who have committed serious, often violent, crimes. We

simply do not have the court system, jail space, or taxpayer's dollars to cope with this problem, so offenders too often wind up back on the streets. Part of the reason our courts are overflowing is that under the present law, a person caught using or possessing one ounce of marijuana has committed a crime as serious as murder, arson, or rape. Surely smoking marijuana cannot be compared--should not be compared--to murder, arson, or rape. If the penalty for use and possession of one ounce of marijuana were reduced, our policemen and judges would have more time and taxdollars to fight serious crime. Keeping the use and possession of one ounce of marijuana as a misdemeanor will be ample penalty for keeping limits on the drug. Indeed, the four states which have already decriminalized marijuana have not noted an increase in the use of the drug. Decriminalization would therefore ease a tremendous court burden without contributing to greater marijuana use.

These, then, are the three reasons to be presented for the decriminalization of marijuana. Experts will show that there are no physical effects caused by the use of marijuana. Evidence will show, also, that mental side-effects cannot be associated with marijuana use. Most importantly, it will be shown that a reduction in penalty from a felony to a misdemeanor will ease a court burden without resulting in an increased use of marijuana. Hopefully, the Senate will vote in what is obviously the best interest of our citizens by decriminalizing marijuana.

APPENDIX I

ATTACK POSTTEST

1. The material presented in the first session of this experiment was easy to understand.

Definitely FALSE			Probably FALSE			Uncertain			Probably TRUE			Definitely TRUE		

2. The material presented in the second session of this experiment was easy to understand.

Definitely TRUE			Probably TRUE			Uncertain			Probably FALSE			Definitely FALSE		

3. The material presented in the first session of this experiment contained or required some information that I didn't know.

Definitely FALSE			Probably FALSE			Uncertain			Probably TRUE			Definitely TRUE		

4. The material presented in the second session of this experiment contained or required some information that I didn't know.

Definitely TRUE			Probably TRUE			Uncertain			Probably FALSE			Definitely FALSE		

5. Mimeographed material is just as easy to read as material presented in a textbook.

Definitely FALSE			Probably FALSE			Uncertain			Probably TRUE			Definitely TRUE		

6. The organization of the printed materials was easy to follow.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

7. Not enough time was permitted for the exercises.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

8. More examples could have been used in the materials.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

9. Schools should use current material, like the topic presented here, whenever possible.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

10. Relevant issues are more interesting to study than are issues which are of little or not interest to the student.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE

11. My personal feeling about the topic discussed in this experiment is that marijuana should be decriminalized.

Definitely FALSE	Probably FALSE	Uncertain	Probably TRUE	Definitely TRUE

12. The directions given during the second experimental session were easy to understand.

Definitely TRUE	Probably TRUE	Uncertain	Probably FALSE	Definitely FALSE