

CONTEXTUAL DETERMINANTS OF ATTITUDE CHANGE IN A
FIELD SETTING: TIME AS A LIMITING FACTOR

by

Joel Alan Dvoskin

A Thesis Submitted to the Faculty of the

DEPARTMENT OF PSYCHOLOGY

In Partial Fulfillment of the Requirements
For the Degree of

MASTER OF ARTS

In the Graduate College

THE UNIVERSITY OF ARIZONA

1 9 7 8

STATEMENT BY AUTHOR

This thesis has been submitted in partial fulfillment of requirements for an advanced degree at The University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgment of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College when in his judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

SIGNED: Joel Alan Dvorkin

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

G. M. White

G. M. WHITE

Associate Professor of Psychology

4-10-78

Date

ACKNOWLEDGMENTS

This project could never have been completed without the knowledge, guidance and patience of Dr. Glenn White, who has served as my thesis chairman. Equally essential was the seemingly unflagging enthusiasm and effort of "Lucky" Marek, who served as confederate for each of the 360 subjects interviewed. Thanks are also due to committee members Dr. Hal Arkowitz and Dr. Phil Balch, and to Mrs. Downey, who typed the final manuscript.

Special thanks goes to Roni Swanson, whose patient support and loving concern helped me to accomplish what occasionally seemed a difficult task.

TABLE OF CONTENTS

| | Page |
|---------------------------------|------|
| LIST OF TABLES | v |
| LIST OF ILLUSTRATIONS | vi |
| ABSTRACT | vii |
| INTRODUCTION | 1 |
| METHOD | 5 |
| RESULTS | 8 |
| DISCUSSION | 13 |
| REFERENCES | 17 |

LIST OF TABLES

| Table | Page |
|-----------------------------|------|
| 1. Table of Means | 9 |

LIST OF ILLUSTRATIONS

| Figure | Page |
|--|------|
| 1. Anchor Extremity | 10 |
| 2. Anchor Extremity by Time Interval Interaction | 11 |

ABSTRACT

In a field experiment employing 360 subjects, opinion judgments on the issue of bread pricing were obtained from non-influenced control subjects and from experimental subjects who were exposed to the supposed judgements of others prior to responding. Extremity and variability of the planted judgments were varied, as was the time interval between presentation of the stimulus question and presentation of the planted judgments. Anchor extremity massively influenced judgments at all levels of the planted judgments. Neither anchor variability nor the time interval affected judgments, although their interaction produced a significant effect on judgments. These results are discussed as implying an even greater robustness of the anchoring effect than was formerly believed.

INTRODUCTION

Recent research has confirmed the massive effect which contextual determinants may have on opinion judgments. White (1975) varied anchor extremity and variability in a field setting using a questionnaire format and found opinion judgments to be massively influenced for all ranges of anchor extremity, with little evidence of contrast effects, that is, over-reactions to extremely high anchors. Wrightsman (1972) defines attitudes as being relatively stable, and Sherif and Sherif (1969, p. 334) define attitudes as more or less enduring and "not subject to change . . . with every change in stimulus conditions." However, White (1975) concludes that the extent to which noncoercive cues are shown to have a significant effect in determining attitude judgments casts doubt on the notion that stable attitudes and opinions are indeed inherent in the respondent. If these attitudes do exist in some stable form, the question arises as to how we can reach them, given the overwhelming influence of these anchoring effects (e.g., Asch 1956; White 1975).

The present study is both a replication and an expansion of White's (1975) study. An attempt was made to replicate White's findings regarding the effect of anchor extremity. Further variables were added to test the limits of this anchoring effect and to explore the possibility of immunizing subjects against these contextual determinants of attitude change. Three variables were investigated: 1) the time interval between presentation of the stimulus question and

presentation of the anchor judgments; 2) anchor extremity; and 3) anchor variability.

McGuire (1969) points out that it is a fundamental notion of consistency theory that the individual will attempt to reconcile his internal belief, his stated opinion, and his gross behavior as much as possible. McGuire concludes that the belief will therefore become more resistant to change if the individual is somehow made to commit himself to it. Lewin (1951) claimed that merely coming to a private unstated decision would suffice to make the respondent more resistant to attitude change. For many questions, it can be assumed that all respondents will have at their disposal large amounts of experiential data. Thus it would seem important to the question of resistance to attitude change whether or not the respondent is given some time to review this information and perhaps come to a private decision before being exposed to the anchors. When there is essentially no such time interval, the anchors are assumed to have their full effect, which is considerable (e.g., Asch 1956; White 1975). This hypothesis seems consistent with the findings of Deutsch and Gerard (1955) that conformity was cut sharply when the subject made a public commitment before being exposed to anchor judgments. The present study attempted to determine whether or not such a time interval did indeed have an effect on the resistance of the respondents to attitude change, without attempting to explore the nature of the cognitive processes which may have been going on during the interval.

While focusing on the time interval described above, the experiment also varied anchor extremity and variability. While some investigators have found that extreme anchors can produce a contrast, or "boomerang" effect (Hovland, Harvey, and Sherif 1957), White (1975) found that even when the anchors were so extreme as to be ridiculous (e.g., five standard deviations or more from the control mean), there was still a significant anchoring effect. Anchor variability has been investigated with conflicting results. Asch (1956) found that the divergence of only one confederate from the confederate group acted to free the subject from the influence of the group, but White (1975) found that this did not generalize to the field setting--questionnaire format, since anchor variability did not influence judgments in the White study. The present study further investigated whether or not the existence of divergent anchors serves as a model which will free the subject from the influence of the influence of the anchors.

The present research was designed to discover how subjects can be immunized against contextual determinants of attitude change, and to shed light on the limits of these anchoring effects. Specifically, it was expected that as the time interval between presentation of the stimulus question and presentation of the anchors increased, the anchoring effects upon the judgments would decrease. It was also expected that the greater the discrepancy between the anchors and the mean response of the control group, the greater would be the immunizing effect of the time interval. Similarly, it was expected that the time

interval. Similarly, it was expected that the heterogeneous anchors would also maximize the immunizing effect of the time interval.

METHOD

Subjects were 360 people chosen as randomly as possible from among shoppers entering a large grocery store in a busy suburban shopping center. Prior to this, data were gathered from thirty pilot subjects at five such centers, one of which was chosen to be the site of the experiment. All data were gathered by a male graduate student with the aid of a female undergraduate confederate. A table was set up in front of the store chosen for the experiment. The experimenter approached each person passing by the table and asked, "Would you spend just a minute to help with a survey? There's just one question." Each cooperating subject was then directed to look at a poster on the table containing the following question: "As a group of concerned consumers, we are attempting to obtain input relative to fair pricing. Under the present economic conditions, what do you believe to be the highest and lowest fair prices for a one-pound loaf of white bread?" After an experimentally controlled interval of either zero, thirty or sixty seconds, the subjects were presented with a survey questionnaire containing the same question as that contained on the poster, along with a column for the signatures of subjects, a column labeled "highest fair price," and a column labeled "lowest fair price"; with twenty-one lines in each column.

The experimenter attempted to approach each person passing by the table. When a group approached the table, only the first person to approach was asked to participate. Sex of the subjects was not

recorded. Care was taken to refrain from cuing subjects in any way after directing them to look at the poster, other than by reminding each subject that there is no right or wrong answer and that only their opinion was being sought. Questions were handled by repeating information contained in the survey question, by claiming ignorance, or by announcing that the survey was being conducted by a consumer group at the University. No subject was pressured into responding.

Pilot data were collected prior to the experiment from thirty subjects to insure the logistical practicality of the method and to obtain normative values approximating the control data. The pilot data were then used to plan the anchors; that is, the planted judgments.

Control data were collected at random during the experiment. Subjects in the control group were given questionnaires with no other signatures or judgments immediately upon being directed to read the poster. Each responded on the top line of the survey form. Each experimental subject was assigned to one of the three time interval conditions and given a questionnaire containing eight signatures (of which four were male and four were female) and eight pairs of judgments which had been planted by the experimenter. Anchor extremity and variability were manipulated via the planted judgments. Anchors in the "highest fair price" column were either homogeneous, with a standard deviation of five cents; or heterogeneous, with a standard deviation of twenty cents. Anchors in the "lowest fair price" column were always homogeneous.

The pilot means were 54.2 cents for the "highest fair price" and 38.4 cents for the "lowest fair price." Experimental conditions were constituted with mean anchor values of 25 cents for the "lowest fair price," and mean anchor values of 40, 55, 70, and 85 cents and one dollar for the "highest fair price." All 360 experimental and control survey sheets were randomized, as were the time intervals. The intervals were controlled by a confederate, who appeared to be pondering and finally signing the questionnaire for the specified interval while the subject was waiting to sign the questionnaire.

This experiment included three levels of the time interval and five levels of anchor extremity. In addition, there were two levels of anchor variability, which included either homogeneous or heterogeneous anchors for the "highest fair price" column. In all, there were thirty experimental conditions (2 x 3 x 5) with ten subjects randomly assigned to each condition, and 60 subjects randomly assigned to a dangling control group. There were two judgments given by each subject. Data were analyzed by fixed effects analyses of variance. Omega-square values were computed to determine the amount of variability explained, and Tukey honestly significant difference comparisons were used for post hoc testing. Trend analyses were computed for anchor extremity and the time variable where significant effects were obtained. An analysis of variance was performed on data from the second issue, "lowest fair price," to determine whether the anchoring effects were powerful enough to influence a non-targeted related issue.

RESULTS

Estimates of "highest fair price" were significantly influenced by anchor extremity, $F = 29.86$ $p < .001$. By omega-square estimate (Hayes 1963) anchor extremity accounted for 27.66 percent of the variance. Condition means appear in Table 1. Trend analyses yielded a linear component ($p < .001$), and a quadratic component ($p < .025$) (see Fig. 1). Tukey honestly significant difference comparisons showed that the \$.85 and the \$1.00 conditions each surpassed the \$.55 and the \$.70 conditions, which in turn surpassed the \$.40 condition ($p < .05$).

The Dunnett test was used to compare the dangling control group to each of the anchor extremity conditions for "highest fair price" judgments. The \$.55 condition, which was an approximation of the control mean based of the pilot data, was not significantly different from the actual control mean. The \$.40 condition was significantly lower than the control mean ($p < .01$). A comparison between the \$.70 condition and the control group approached but failed to reach significance at the $p < .05$ level. Both the \$.85 and the \$1.00 conditions were significantly greater than the control mean ($p < .001$).

While the time interval failed to show a significant influence on estimates of either "highest" or "lowest fair price," there was a significant effect produced by the anchor variability by time interval interaction on the "highest fair price" estimates (see Fig. 2). However, omega-square testing showed that this effect accounted for only

Table 1. Table of Means

| Time Interval | Anchor Extremity | | | | | | | | | | |
|---------------|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|---------|---------------------------|---------|-----------------------|
| | A = \$.40 | | A = \$.55 | | A = \$.70 | | A = \$.85 | | A = \$1.00 | | |
| | SD* = 5 | SD = 20 | SD = 5 | SD = 20 | SD = 5 | SD = 20 | SD = 5 | SD = 20 | SD = 5 | SD = 20 | |
| T = 0 sec | 41.4 | 53.5 | 52.1 | 51.9 | 56.4 | 64.7 | 73.4 | 66.0 | 68.7 | 69.3 | $\bar{T}_0 = 59.7$ |
| T = 30 sec | 42.0 | 43.1 | 53.9 | 52.6 | 60.4 | 53.9 | 73.7 | 58.8 | 80.9 | 65.5 | $\bar{T}_{30} = 58.5$ |
| T = 60 sec | 42.5 | 47.1 | 49.8 | 55.1 | 61.3 | 52.4 | 65.3 | 71.6 | 67.2 | 65.6 | $\bar{T}_{60} = 57.8$ |
| | $\bar{A}_{.40} = 44.9$ | | $\bar{A}_{.55} = 52.6$ | | $\bar{A}_{.70} = 58.2$ | | $\bar{A}_{.85} = 68.1$ | | $\bar{A}_{\$1.00} = 69.5$ | | |

*Standard deviations (in cents)

$$\bar{H}_{SD = .05} = 59.3$$

$$\bar{H}_{SD = .20} = 58.1$$

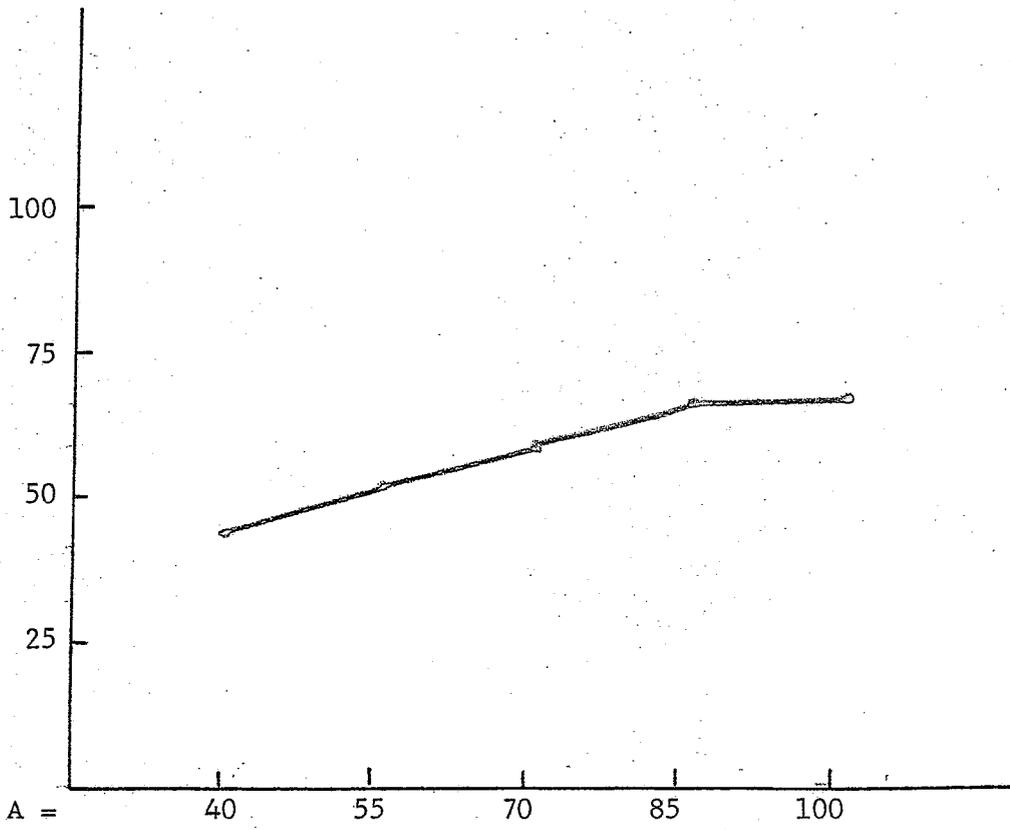


Fig. 1. Anchor Extremity

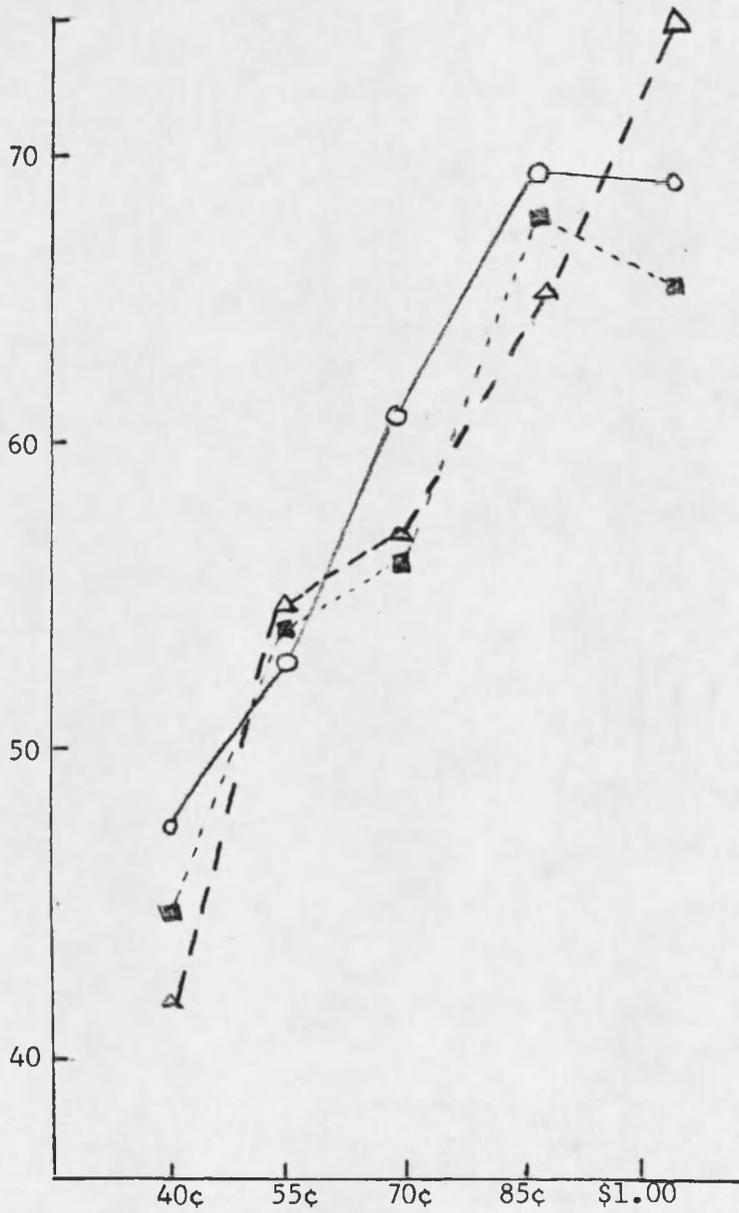


Fig. 2. Anchor Extremity by Time Interval Interaction

- = 0
- -△ = 30
- ...■ = 60

.01 percent of the variance. Tukey honestly significant difference comparisons failed to reveal the locus of this interaction effect.

Anchor variability failed to show a significant effect on opinion judgments. On the non-targeted measure, "lowest fair price," anchor extremity approached, but did not achieve, significance. No other effects were significant.

DISCUSSION

Consistent with the findings of White (1975), opinion judgments were massively influenced at all levels by the extremity of the planted anchors. Furthermore, White's finding that anchor variability failed to influence opinion judgments was also replicated. These findings were obtained in a field setting. The issue of bread pricing was one which is of immediate economic import to everyone, and one which did not require any special or expert knowledge on the part of the respondents.

White's failure to find a "boomerang" effect was also replicated, despite the use of extreme anchors. An examination of the shelves of the food store used in the study revealed that no bread of any kind or quality, nor in any size loaf in the store sold for as much as the highest anchor mean of \$1.00. Several anecdotal comments by the experimenters are illustrative of the enormity of the anchoring effect. For example, a fairly common occurrence during the study was that a subject would use the experimentally controlled interval of either 30 or 60 seconds to harangue the experimenter about the inequity of current bread prices, usually spiced with reminiscences of five cent loaves of bread, and often with declarations that even at today's prices, \$.25 was plenty to pay for a loaf of white bread. Upon seeing the planted anchors, even when they were \$.85 or \$1.00, these same people would silently sign the form, putting down judgments of from \$.75 to \$.90.

Following the pessimistic results of the White study for those who credit people with stable inherent attitudes and beliefs, it was the hope of this study to give back to the consuming public some measure of integrity in forming opinions by finding a limiting variable which would serve to mitigate the massive anchoring effects previously found. After careful examination of some twenty proposed variables, it was decided that allowing the respondent an interval between presentation of the stimulus question and presentation of the anchors seemed most likely to limit the anchoring effect. This hypothesis was clearly refuted in the study. In all three interval conditions, the anchor extremity effect was significant and strong. This is despite strong anecdotal evidence that many of the respondents did in fact use the time interval to come to not only private, but also public judgments! So much for Lewin's (1951) claim that coming to a private unstated decision would serve to make the respondent more resistant to attitude change.

The failure to find an anchor variability effect, replicating White's finding, was another rejection of the notion (e.g., Asch 1956) that even one divergent anchor will serve as a model which will free the subject from the effects of anchors. Perhaps the field setting and "cover" story which aroused little suspicion were in part responsible for this finding.

The implications of the present study in the field of opinion polling are ominous. They suggest that incredible care must be taken to insure that in the course of the polling process itself no anchors

are made available to the respondents. Further, the lack of consistency of stated opinions seems to imply that "an opinion is a sometime thing," and casts doubt on the validity of such polls as reliable indicators of public opinion. In other words, how can such polls provide reliable indicators of public opinion when studies such as this one cast doubt on the existence of stable attitudes and opinions in individuals.

Another foreboding implication has to do with the Anglo-American jury system. If one persuasive juror could take the initiative and effectively set anchors for the entire twelve-person jury, this study suggests the likelihood that there would be no other effective opinions expressed. In its failure to establish mitigating variables for the anchoring effect, the study was unable to prescribe a prevention or remedy for such an occurrence.

During the experiment, it was quite common for subjects to ask the experimenter what the "right" answer was, despite repeated statements that there was no right answer and that only their opinion was being sought. At times subjects would go to quite extreme and comical lengths to find anchors upon which to base their judgments, including the oft-repeated question, "What did everyone else put?"

The only optimistic hint provided by the time interval variable is the significant interaction between it and anchor variability. Although the locus of the interaction is not clear, an examination of the data reveals that the zero second time interval was least responsive to the lowest anchors (which were below the control mean) and most

responsive to the highest anchors; while the intermediate (thirty second) time interval was most responsive to the lowest anchors and least responsive to the highest anchors. Although the effect accounted for only a very small percentage of variance by the omega-square test, perhaps further investigation might reveal ways in which this interaction could mitigate the anchoring effects.

In summary, the study successfully replicated in all important aspects the White (1975) study, but failed in any meaningful way to uncover any limiting factors to the anchoring effect. It remains for further investigators to uncover such factors; to find the limits of this incredibly powerful anchoring effect, if indeed they do exist. Some possibilities come to mind. Perhaps stronger admonitions to be honest and freethinking might encourage people to "stick to their guns." One might discount the credibility of the supposed prior respondents, or offer equally strong competing anchors; however, these blatant cognitive variables are merely other forms of the social influence from which this study had hoped to free respondents. One other possibility is that P. T. Barnum's classic social psychological remark--"There's a sucker born every minute"--might be closer to the truth and that our respondents in fact have no guns to stick to.

REFERENCES

- Asch, S. E. Studies of independence and conformity: A minority of one against a unanimous majority. Psychological Monographs, 1956, 70 (9, whole No. 416).
- Deutsch, M. and Gerard, H. B. A study of normative and informational influences upon opinion judgment. Journal of Abnormal and Social Psychology, 1955, 51, 629-636.
- Hayes, W. L. Statistics for Psychologists. New York: Holt, Rinehart and Winston, 1963.
- Hovland, C. I., Harvey, O. J., and Sherif, M. Assimilation and contrast effects in reaction to communication and attitude change. Journal of Abnormal and Social Psychology, 1957, 55, 244-252.
- Lewin, K. Field Theory in Social Science. New York: Harper and Row, 1951.
- McGuire, W. J. The nature of attitudes and attitude change. In Lindzey, C. and Aronson, E. The Handbook of Social Psychology. Reading, Massachusetts: Addison-Wesley, 1969, 3, 136-314.
- Sherif, M. and Sherif, C. W. Social Psychology. New York: Harper and Row, 1969.
- White, G. Contextual determinants of opinion judgments: Field experimental probes of judgmental relativity boundary conditions. Journal of Personality and Social Psychology, 1975, 32, 6, 1047-1054.
- Wrightsman, L. S. Social Psychology in the Seventies. Monterrey: Brooks-Cole, 1972.

