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THE EFFECTS OF COUNTERATTITUDINAL IMPROVISATION ON ATTITUDES: AN EXPLORATION OF MEDIATING PROCESSES

by

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of the requirements for the degree of
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ABSTRACT

THE EFFECTS OF COUNTERATTITUDINAL IMPROVISATION ON ATTITUDES: AN EXPLORATION OF MEDIATING PROCESSES

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This dissertation examined what has been called the "improvisation effect," an empirically observed enhancement of opinion change in individuals who actively advocate a counterattitudinal position compared to those who are passively exposed to such a position. This entailed a twofold approach. On the one hand, an attempt was made to explore the operations necessary to produce this effect by systematically varying the behavior required and the context in which the behavior was performed. On the other hand, an attempt was made to explore the processes mediating this effect by explicitly measuring factors considered by the major alternative theories as central to their dynamic models.

More specifically, the present experiment took as its starting point a recent version of functional theory. According to this approach, qualitatively different types of discrepant action situations (or dilemmas) are assumed to have different motivational and behavioral implications. Actions which are discrepant from a person's values

are said to arouse moral dissonance, while actions which are of little intrinsic worth are said to arouse hedonic dissonance. Active improvisation (in comparison to both oral delivery and passive reading) is presumed to influence arousal of these types of dissonance differentially: increasing moral but decreasing hedonic dissonance. Moreover, each type is presumed to evoke different attitudinal reactions designed to reduce it; moral dissonance is said to foster acceptance of the advocated position, while hedonic dissonance is said to foster enhancement of a subject's task and experimental role.

To test these propositions, subjects in four experimental conditions were asked to deliver speeches clearly inconsistent with their own positions. An attempt was made to create a moral dilemma for half the subjects by telling them that their speeches would have important consequences (i.e., they would be effective in influencing other people). For the others, an attempt was made to create a hedonic dilemma by telling them that their speeches would have virtually no consequences (i.e., they were being made solely for practice). In each dilemma condition, half the subjects actively improvised, while the others read aloud transcripts of previously improvised speeches. Subjects were then asked a variety of questions designed to measure issue- and task- attitudes, as well as a variety of possible mediating mechanisms. Three control groups were also employed.

Despite indications to the contrary in one of the pilot studies, there was little evidence that the procedures of the final study were successful in manipulating moral and hedonic dissonance. Whether for this, or for some other reason, there was almost no support for the

hypothesized effects of the experimental manipulations on differential arousal and resolution of moral and hedonic dissonance, nor was an "improvisation effect" obtained in either dilemma condition. Nevertheless, since it could not be definitively concluded that the manipulations had, in fact, failed the dynamics of these discrepant action situations were explored further. In so doing, the logic of the original hypotheses was reconsidered in an attempt to deal with the interdependence of arousal and resolution processes. As a result, refined hypotheses were developed for each of the dilemmas which received reasonably good support in several internal analyses. Support for alternative mediational interpretations, on the other hand, was generally meager.

Interpreting these data was quite difficult in the absence of clearcut effects on the major dependent measures. Little, for example, could be concluded about the "improvisation effect" and its mediation except that improvisation is not always effective in enhancing attitude change. Nevertheless, the success of the refined but admittedly post hoc hypotheses in accounting for within cell variance, led tentatively to the conclusion that the interdependence of arousal and resolution processes needs more subtle consideration in theories of attitude-discrepant action.

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CHAPTER I

THE MEDIATION OF IMPROVISATION-INDUCED OPINION CHANGE: A THEORETICAL REVIEW

When a person actively improvises a counterattitudinal message he is more influenced to accept the message content than is a comparable person passively exposed to the same message. [1] Despite the great abundance of evidence supporting this proposition (Culbertson, 1957; Elms, 1966; Greenwald & Albert, 1968; Harvey & Beverly, 1961; Janis & King, 1954; Janis & Mann, 1965; King & Janis, 1956; McGuire, 1961; Scott, 1957, 1959; Watts, 1967; Zimbardo, 1965), the underlying mechanisms are still a matter of contention.

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[1] Not every reviewer of this literature agrees with this conclusion. A most striking contrast to the present conclusion appeared in McGuire's (1969) chapter in the Handbook of Social Psychology where, after a rather cursory review of the literature, he concluded that there was no evidence for such an "active participation effect." His major evidence, however, was his own inoculation research, the generality of which may be questioned on several grounds. First, McGuire and his coworkers (McGuire, 1964) used cultural truisms selected partially because of the difficulty people were expected to have in defending them. Second, McGuire's subjects did not argue counterattitudinally, but merely defended their own prior beliefs. Finally, the criterion used to assess the effectiveness of active improvisation in his studies was the indirect strengthening of initial beliefs against subsequent counterattacks, while that of interest here and in most of the relevant literature is the direct opinion change induced in the counterattitudinal direction. His conclusion, therefore, does not seem to apply to the bulk of the relevant literature.

Theoretical Interpretations

Incentive theory

According to several related theoretical positions associated with the Yale Studies in Attitude and Communication (Elms & Janis, 1965; Hovland, Janis & Kelley, 1953; Janis & Gilmore, 1965; Kelman, 1953) it is the occurrence of accompanying facilitative or supporting responses and the absence of accompanying inhibiting or interfering responses which are primarily responsible for the "improvisation effect." [2] The basic position of these "Incentive" theorists may be stated briefly as follows: All influence situations offer potential opportunities for positive and negative affective and behavioral reactions to influence. To the extent that factors (sometimes referred to as incentives) induce a predominance of positive to negative reactions there will be positive change in the induced direction. Improvisation is effective in promoting such change, they have argued, precisely because it fosters a number of facilitative reactions (sometimes designated "reformulation," "implicit labelling," and "hand-tailoring") while limiting the occurrence of several inhibiting reactions (sometimes designated "counterarguing" and "rejection").

Dissonance theory

Cognitive dissonance theorists (Brehm, 1965; Brehm & Cohen, 1962; Festinger, 1957; Rabbie, Brehm & Cohen, 1959) have generally argued that it is "commitment" to the action-cognition engendered by the active improvisation of a counterattitudinal message that is

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[2] The term "improvisation effect" is used to refer to the empirically demonstrated enhancement of opinion change occurring in individuals who actively advocate a counterattitudinal position compared to those who are passively exposed to such a position.

primarily responsible for this "improvisation effect." Their basic position may be stated briefly as follows: Committing oneself to take an attitude-discrepant action (a) increases dissonance arousal by making clear the dissonant character of the relationship between the cognition of the action and the individual's own beliefs, while (b) increasing the difficulty an individual would have in changing his cognition of the action (i.e., one of the cognitive elements in the dissonant relation) as a means of reducing his dissonance. It, therefore, becomes considerably more likely that attitude change in the direction of the position supported will be the preferred mode of dissonance resolution. This follows from the principle that an individual will change that element in a dissonant relationship which offers the least resistance to such change. Improvisation is effective in promoting such change, then, precisely because it increases the commitment of the subject to the cognition of the discrepant action he has taken.

Attribution theory

A third approach, attribution theory (Bem, 1965, 1967; Kelley, 1967), was initiated primarily as an alternative means of explaining the outcomes of research based on cognitive dissonance theory. According to this approach, it is not an internal dynamic process, such as dissonance, but a judgmental process which is responsible for the resultant pattern of opinion scores in the dissonance literature. Thus, it argues that subjects observe their own behaviors along with the concomitant situational factors apparently inducing these behaviors and attribute attitudes to themselves on this basis, much as would an outside observer with the same information.

In attribution theory's emphasis solely on judgmental processes it is also quite different from incentive theory, which stresses the dynamic self-persuasion process accompanying attitude-discrepant action. Nevertheless, the attribution analysis (at least the one offered by Bem) relies heavily on some of the same variables as incentive theory in making predictions about the effects of improvisation on opinions. Thus, Bem (1965) argued that subjects improvising a counterattitudinal speech would be "...surrounded by stimuli that would characteristically control the behaviors of an individual who 'believed' the point of view" (p. 209). Furthermore, he suggested that improvisers would select for themselves "...precisely those arguments that had initial tact properties..." (p. 209) - i.e., those arguments by which they would be most persuaded. These two factors are essentially the same as those employed by incentive theorists in their discussions of the "implicit labelling" and "hand-tailoring" hypotheses (Hovland, Janis & Kelley, 1953). The failure of Hovland, Janis and Kelley to find support for these two hypotheses, as well as the lack of subsequent evidence for either of them, raises a question of the adequacy of explanatory schemes, such as Bem's, which rely almost exclusively on them to explain the "improvisation effect."

Functional theory

Dissonance theorists, it was seen, focus on the action itself in their attempts to explain the role of improvisation in facilitating positive opinion change, while incentive and attribution theorists stress the content of the action in their postulations of mediating processes. Recently, this distinction has been made the basis for a partial reformulation of the processes underlying attitude-discrepant action (Baron, 1968; Kelman & Baron, 1968a, b; Kelman, Baron, Sheposh

& Lubalin, in preparation). According to this "functional" approach, particular instances of discrepant action may involve either (1) the violation of an attitude or value - as in studies which induced people to cheat (Mills, 1958), to lie (Festinger & Carlsmith, 1959), or to shock a helpless victim (Brock & Buss, 1962) - or (2) the performance of an intrinsically valueless task - as in studies which induced people to copy random number tables or to place spools of thread into the same box over and over again (Festinger & Carlsmith, 1959). In the case of attitude or value violation, they argued, subjects would experience a moral dilemma which stems from the content of their action and can be resolved by somehow coming to grips with the implications of that content. In the case of intrinsically valueless action, they argued, subjects would experience only a hedonic dilemma whose origin and resolution lay instead in the action itself.

Research based on functional theory thus far (Baron, Kelman, Sheposh & Johnson, 1968; Kelman, Baron & Sheposh, 1968; Lubalin, Kelman & Dabbs, 1968; Sheposh & Baron, 1968) suggests that the impact of moral dilemmas (i.e., the arousal and resolution of moral dissonance or guilt) is generally consistent with an incentive theory interpretation, while the impact of hedonic dilemmas (i.e., the arousal and resolution of hedonic dissonance or feelings of doing something worthless) is generally consistent with a dissonance theory interpretation. Nevertheless, functional theory accounts for these data with its own unique logic which is more than the mere application of these independent theoretical positions to subsets of dilemmas. Overall, however, for both dilemmas, there is considerable similarity between the formal structure of the functional argument and traditional

dissonance logic.

Thus, functional theory is concerned with motive arousal as a function of attitude-discrepant action, but, unlike dissonance theory, argues that different motives are likely to be aroused, depending on the nature of the dilemma. Functional theory departs even further from the pattern of dissonance theory when it comes to considerations of resolution processes in that it holds that the specific motive aroused (i.e., either moral or hedonic dissonance) to some extent limits the particular mechanisms that will effectively reduce it. The choice of mechanism is determined by the functional relevance of any particular mode of resolution to the aroused motive. As a general rule, however, it was proposed that moral dilemmas would be resolved by confronting the issue raised by the dissonance-arousing content, while hedonic dilemmas would be resolved by temporary cognitive distortions or misperceptions of the task and the subject's role in it.

Although it has never directly addressed the "improvisation effect," functional theory would account for the enhancement of attitude change primarily in terms of moral dissonance effects for two reasons. First, improvising (as suggested by cognitive dissonance theory) should tend to increase involvement or commitment to the immoral position, thereby increasing moral dissonance arousal. It should, on the other hand, often tend to reduce hedonic dissonance arousal, since the improvisation task frequently tends to be more intrinsically meaningful than passively listening to or reading a statement. More importantly, however, issue attitude change, the dependent measure under consideration in the "improvisation effect," is a functionally relevant mode of moral dissonance reduction, but is essentially irrelevant for those

experiencing hedonic dissonance. Thus, functional theory would hold that improvisation increases moral dissonance arousal, which can subsequently be reduced by attitude change in the direction supported. Moreover, it would hold that improvisation, if anything, reduces hedonic dissonance arousal for which attitude change, in any case, is not an appropriate mode of resolution.

Evidence

At least two types of empirical investigation are potentially useful for clarifying the nature of the conceptual interpretation needed for this "improvisation effect." One type involves direct attempts to assess proposed mediating processes. The other involves attempts to find the limits of this phenomenon by systematically varying the nature of the counterattitudinal action required. Both approaches were incorporated to some extent in the research to be reported in this paper.

Direct measurement of mediation

Most studies directly assessing mediation of the "improvisation effect" have focussed on only those processes implicated by the Yale Studies group. Dissonance and attribution theorists have generally been more concerned with the effects of their mechanisms than with demonstrating how they work (at least in this particular area), while the functional approach has not yet addressed the area of improvisation effects. Thus, most of this research has dealt with the role of content factors in mediating attitude change.

Content factors. In one of the early Yale studies Kelman (1953) reported that among subjects who improvised an attitude-discrepant essay, those in the condition exhibiting the most opinion change (i.e., his Low Restriction subjects) were judged to have used

significantly more of the counterattitudinal arguments presented by a speaker (to whom they had all previously listened) and to have produced essays of higher quality, and were found to have written longer essays than were those subjects in a condition exhibiting less opinion change (i.e., his High Restriction subjects). Furthermore, the Low Restriction subjects wrote significantly better and longer essays and produced a larger number of new arguments than did a third group (i.e., Control subjects) for whom opinion change was also relatively low. These data, Kelman argued, suggest that differences in quality and development of the counterattitudinal content were responsible for the observed attitudinal effects.

Kelman, however, also presented evidence, albeit less direct, suggesting that interfering responses such as "counterarguing" (i.e., actively thinking of arguments refuting the counterattitudinal position) and "rejection" (i.e., negative affective reactions toward the issue or speaker) also play a role in mediating opinion changes by reducing the probability of acceptance of the new position. Data on a self-report scale of "awareness of interfering responses" indicated that, for those subjects actively supporting a counterattitudinal position (i.e., Conformists), subjects in the group demonstrating the greatest opinion change (i.e., Low Restriction condition) reported less awareness of such responses than subjects in either of the other conditions whose awareness levels did not differ from each other.

Two other studies (Elms & Janis, 1965; Janis & Gilmore, 1965) also examined the role of the attitude-discrepant content in mediating counterattitudinal shifts in opinion and reported data providing weak support for its mediational role. Both studies

varied the level of incentive offered to induce subjects to comply, the favorableness [3] of the agency sponsoring the counterattitudinal performance, and the overtness of the performance (i.e., some subjects agreed to write counterattitudinal essays and did so, while others only agreed to perform this task) prior to attitude assessment.

Janis and Gilmore reported that, among those who actually wrote essays (i.e., Overt Role Players), the amount of "explicit pro arguments" produced (i.e., the amount of actual improvisation) was significantly increased by two of the independent variables (incentive and sponsorship) while a main effect in the same direction on their measure of attitude change was found only for the sponsorship variable. This suggests that content could at most have been responsible for this part of their findings. Elms and Janis found stronger effects on their attitudinal measures than did Janis and Gilmore in that the same two independent variables combined produced the predicted interaction effect. Their data on "explicit pro argument" production, however, while following a pattern similar to that obtained by Janis and Gilmore, failed to reach significance for either.

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[3] The term "favorableness," employed by these authors to describe the dimension along which the sponsoring agency was varied in these two studies, is rather vague, if not misleading. The operations in both studies involved the creation of one condition (i.e., positive or favorable sponsor) in which the agent as well as the subject's action for this agent were portrayed as serving the public interest. At the same time they involved the creation of another condition (i.e., negative or unfavorable sponsor) in which the agent as well as the subject's action for this agent were portrayed as exploitative. One dimension better able to encompass both types of operations than favorableness would be defined by the bipolar adjectives benevolent-malevolent (since a benevolent agent would be likely to act in the public interest without exploitation, while a malevolent agent would be likely to exploit the public if possible). Therefore, in subsequent references to this dimension, throughout this paper, the term benevolence will be used instead of favorableness to describe this dimension.

In a study similar to these last two studies in most respects (except that sponsorship was always constant and ambiguous as to benevolence), Rabbie, Brehm and Cohen (1959) found strikingly different results. Not only did they find equally as much opinion change by the active improvisers and the commitment-only subjects, but they found that regardless of whether subjects wrote their essays before or after their opinions were assessed, the number of arguments written was inversely related to the amount of opinion change. [4] Both findings are clearly inconsistent with those reported in the three studies considered so far and raise the question of the generality of both the "improvisation effect" and of the mediational role of content factors. The former question will be considered in the next section of this paper, but first the remaining studies which addressed the latter will be considered.

Most of the other evidence on the role of content in mediating opinion change tends to show relatively little overall connection between the two (Carlsmith, Collins & Helmreich, 1966; Epstein, 1969; Festinger & Carlsmith, 1959; Greenbaum, 1966; Steiner & Darroch, 1969; Zimbardo, 1965). Festinger and Carlsmith, for example, in their classic $1 and $20 experiment, recorded the improvisations of their high and low incentive condition subjects and submitted them to judges to be rated on five dimensions: (1) content before remark by stooge;

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[4] It is not particularly clear why they chose to report these results in terms of a chi-square analysis of a fourfold percentage table (which divided subjects into (1) those who changed in the discrepant direction and those who did not and (2) those who wrote four or more and those who wrote three or fewer arguments), when a more straightforward correlational analysis would have provided the needed information.

(2) content after remark by stooge; (3) overall content; (4) persuasiveness and conviction; and (5) time spent on topic. On all five measures the low opinion change group ($20 condition) had higher means (i.e., improvised more) than did the high change group, but none of the mean differences was significant.

Zimbardo reported that there were no differences in the quality of arguments or examples produced in his two improvisation conditions, despite the fact that those in the high effort condition (i.e., those having a long delayed auditory feedback interval) changed their opinions significantly more than those in the low effort condition (i.e., those having a short delayed auditory feedback interval). Similarly, Epstein found no differences in the rated effectiveness of speeches improvised by high and low Machiavellian role players, while finding significantly more opinion change among low Mach improvisers.

In addition to considering the impact of their independent variables directly on the content produced and on attitude change, several studies reported correlations between measures of content quality and measures of opinion change. Transcripts of the face-to-face role-playing sessions in Carlsmith, Collins and Helmreich's replication of Festinger and Carlsmith's study were rated on the same measures used in the original study reported earlier and on three others. In addition, the essays produced in their modified replication of this same experiment were rated on four different content-analytic criteria. Analyses of variance on all of these measures of content failed to exhibit any effects at all as a function of incentive level, despite the significant findings within both groups of differences in the amount of attitude change produced.

Moreover, they reported that none of the correlations between any of these measures and posttest attitudes was significant.

Greenbaum found (1) that subjects who were given a choice as to which of two arguments to support (actually all were induced to support a counterattitudinal position) produced significantly fewer "new arguments" and "original examples" than those given no such choice and (2) that subjects high in need for approval produced more of these than did those low in this need. Attitude change (both immediate and delayed), however, was only affected significantly by the latter, and in the opposite direction (i.e., Lo-NA subjects changed more). Moreover, the correlations between the content measures and attitude change were low and not significantly different from each other in his various experimental conditions.

One reason for the failure of most researchers to find general relationships between quality of performance and opinion change was proposed by Elms (1967) who suggested that the detection of such relations might "...necessitate the use of considerably more subtle performance measures than any which have so far been employed in role-playing studies" (pp. 140-141). A second methodological interpretation was offered by Steiner and Darroch (1969). They argued that global measurement of such relations could have failed to exhibit significant correlations simply because the actual relations might vary from condition to condition, generally cancelling each other out for the total population.

Steiner and Darroch tested this hypothesis in an empirical study in which subjects were assigned to improvise counterattitudinal speeches under several different conditions. While their particular conditions are not specifically germane to the question of processes mediating

the "improvisation effect," their results suggest the potential fruitfulness of an approach which considers the relationships between mediating processes and dependent behaviors as a function of the manipulated conditions. A brief overview of their procedures is, therefore, in order.

Half their subjects were told that their audience would know they had not voluntarily chosen to support the counterattitudinal side of the issue (public assignment), while the other half were told that their audience would think these were their own views (private assignment). Half of each group of subjects were told that their audience agreed with the position of the message, while the remainder were instructed that their audience would disagree with this position. Analyses of variance on both objective (i.e., judge's ratings) and subjective (i.e., self-ratings) measures of performance quality as well as on a measure of attitude change revealed no significant main or interaction effects (except that publicly assigned improvisers showed more opinion change at the .10 level than did privately assigned subjects).

Despite the absence of mean differences as a result of the experimental manipulations, Steiner and Darroch explored the possibility that the interrelationships among the variables they measured might have differed systematically as a function of the experimental conditions. These data indicated no significant overall correlations between three measures of performance quality (two objective and one subjective) and attitude change. The objective measures, however, were significantly more highly correlated with opinion change when the audience agreed with the speech and the subjective rating was significantly more highly

correlated with it when assignment was public. Besides these "main effects" they also reported some "interactions" of interrelations of these measures as a joint function of their experimental manipulations. Thus, although the specific conditions of this experiment are not of general interest to the questions of "improvisation effects" and their mediation, the authors' approach and the results of their analyses suggest that refined hypotheses about the relations of indices of improvisation, to each other and to attitudinal outcomes, are likely to be more useful than the global conceptions offered by the major theories. [5]

Before leaving the topic of content mediation of attitude change it is worth noting that even the positive evidence cited earlier as supportive of incentive theory predictions (Elms & Janis, 1965; Janis & Gilmore, 1965; Kelman, 1953) could be interpreted as compatible with cognitive dissonance theory in at least two ways. One is based on the assumption that attitude change is an immediate consequence of commitment to an attitude-discrepant action which occurs even before the action itself takes place. Thus, it argues that subjects in high dissonance conditions would begin writing their essays with attitudes already more consistent with their essays than would subjects in low dissonance conditions. The former, then, might be expected to write stronger essays simply because they believed more in what they were

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[5] Of course, the evidence they offered would have been stronger had they been successful in producing differential attitude change in the first place. Since there were no significant differences in attitude change between conditions, it is hard to know exactly what their interpretation explains.

saying. The other interpretation (Brehm, 1965) reversed the causal link and suggested that subjects in high dissonance conditions might write better essays in order to facilitate dissonance-reducing attitude change in the direction of the essay.

The problem with such "dissonance interpretations," as with dissonance theory in general, is the lack of clear theoretical imperatives connecting the basic principles of dissonance arousal to specific behavioral manifestations. This has sometimes led to conflicting dissonance interpretations of the same phenomenon (Brehm, 1965; Elms & Janis, 1965). The relations between the quality of content and opinion change is a case in point, as Rabbie, Brehm and Cohen (1959) have offered a third "dissonance interpretation," incompatible with the two already mentioned. According to their dissonance logic, successful dissonance reduction through opinion changes might reduce the need to write the strong resolution-facilitating essays suggested in Brehm's (1965) interpretation.

This debate, both within dissonance theory and between it and incentive theory, about the dynamics of the relation between content and attitude change is really quite pointless in light of the preponderance of evidence suggesting few connections between them. The confrontation might be resumed at a somewhat different level by exploring the suggestion of Steiner and Darroch (1969) that more refined hypotheses be considered. But even then, it is not clear that dissonance theory, at least, can generate clear and consistent hypotheses not subject to a considerable number of reinterpretations equally as consistent with the theor

Effort. One other mediating process was assessed directly in an empirical study. Zimbardo (1965) argued that the effort involved in various conditions of counterattitudinal advocacy mediates dissonance arousal and opinion change in the following manner. First, he proposed that improvisation involves considerably more effort than the active delivery of arguments previously prepared by someone else. Thus, improvisers should, according to this logic, experience greater dissonance arousal when performing an attitude-discrepant act than another group of subjects for whom the task was relatively less difficult. In an attempt to justify their more effortful participation, he concluded, improvisers would exhibit more attitude change.

The results of his study indicate, however, that subjects who improvised their own counterattitudinal messages changed their attitudes no more and also reported experiencing no greater effort than subjects who simply read formally prepared speeches aloud. Even internal analysis of the improvisers indicated only that those who "actually improvised" (a term not specifically defined by Zimbardo) reported slightly more effort ($p < .10$) and changed their opinions slightly, but not significantly, more than those who did not. Thus, Zimbardo not only failed to get an "improvisation effect" with these two conditions, but was unable to provide any convincing proof that such effects are mediated by effort.

Overall, this evidence, as well as all the evidence on the direct assessment of content mediation of opinion change, is weak and inconclusive. Considerably more research based on considerably more refined hypotheses is needed.

Systematic variations of counterattitudinal advocacy

Somewhat less and equally inconclusive research has been done which has systematically varied the nature of the counterattitudinal action required in order to probe the limits of the "improvisation effect." Unlike the research explicitly focussed on mediating processes, however, this research has been pursued by cognitive dissonance as well as incentive theorists.

Necessity of overt action. Three previously mentioned studies (Elms & Janis, 1965; Janis & Gilmore, 1965; Rabbie, Brehm & Cohen, 1959) considered whether the "improvisation effect" requires that overt action be taken or whether it will occur without overt action as long as the subject has committed himself to perform the action eventually. In the earliest study, by Rabbie, Brehm and Cohen, subjects were asked by a campus survey organization representing the administration to write essays in favor of eliminating intercollegiate athletics - a position opposed by most subjects. For half the subjects, writing of the essay preceded the administration of the attitudinal measure, while for the other half the order was reversed. Although there were no passive-exposure or communication-absent control groups, there was evidence that at least some of the subjects (i.e., their Low Justification subjects) changed their opinions in the advocated direction. Furthermore, the amount of attitude change induced did not depend on whether the subject had already written an essay or merely agreed to do so.

In the second study (Janis & Gilmore, 1965) benevolence of the agency sponsoring the counterattitudinal essay was varied in addition to the timing of the essay (i.e., whether or not the essay had actually been written prior to the time of attitudinal assessment). Disregarding

the role of incentives or justifications for performing the discrepant act, their data were consistent with those of Rabbie, Brehm and Cohen in indicating no differential attitude change between overt improvisers and commitment only subjects when sponsorship was malevolent. When sponsorship was benevolent, however, those actually writing the essays exhibited significantly more opinion change than those who had not yet done their writing.

The findings of the third study (Elms & Janis, 1965) were entirely consistent with the second (again ignoring incentive effects). Overt improvisation was successful in inducing attitude change when sponsorship was benevolent and was as ineffective as mere commitment on this same dimension when sponsorship was malevolent.

The conclusions to be drawn from these three studies are not entirely clear. While it seems fairly clear that overt essay writing is a necessary condition for the improvisation effect when a sponsor is positive, what happens under negative or ambiguous sponsorship is uncertain. One study (Rabbie, Brehm & Cohen, 1959) indicated an "improvisation effect" under such sponsorship conditions even when there was only a commitment to write the essay, while the other two studies indicated no such attitude change even when subjects actually wrote the essay. One interpretation of these findings would be that content factors (i.e., those stressed by incentive theory) play a more significant role in mediating attitude change when dissonance is low (i.e., when the sponsor is benevolent) than when dissonance is high (i.e., when the sponsor is malevolent).

Consequences of action. Several studies have varied descriptions of the consequences of improvising rather than the nature of the action itself (Carlsmith, Collins & Helmreich, 1966; Harvey, 1965; Nel, Helmreich & Aronson, 1969; Steiner & Darroch, 1969). In the earliest of these studies Harvey asked subjects to tape-record counterattitudinal messages purportedly "as part of a study on self-insight." Half the subjects were told that their tapes would be erased as they listened to them being played back (Private condition), while the others were told to be careful not to erase the tapes since they would be listened to later by an academic committee (Public condition). No differences in immediate attitude change appeared as a function of this difference, but after one week public improvisers retained more of the change than private improvisers.

Carlsmith, Collins and Helmreich also had public and private conditions of improvisation in their extension and replication of the Festinger and Carlsmith (1959) study. Half of their subjects directly confronted a "naive subject" (actually a confederate) and presented a counterattitudinal speech (i.e., that a boring task was interesting), while the other half wrote essays on this topic to be seen only by the experimenter. Although they reported a main effect indicating more positive posttest opinions in the private essay than in the public speech conditions, they pointed out that this was a function of the specific incentive levels used, as attested to by an even stronger interaction of the public-private factor with incentive level. Thus, their low incentive subjects ($.50)changed more in the public speech condition, while those receiving higher financial inducements ($1.50 or $5.00) changed more in the private essay

condition. There is also the possibility, only hinted at by the authors, that those given more time to prepare (i.e., essay subjects) produced better, more persuasive arguments (provided there was sufficient incentive to do so). These data may, therefore, not be a function of the consequences of improvisation, but of the action actually taken. Unfortunately, comparable measures of performance quality were not obtained in the essay and face-to-face conditions.

Nel, Helmreich and Aronson attempted a direct exploration of the question of consequences. In their study, subjects were asked to make video recordings of counterattitudinal speeches which they were told would be used to influence either (a) a group already agreeing with the speech, or (b) a group opposed to the speech, or (c) an uncommitted group. There were no significant differences between these three groups in the amount of attitude change induced by their improvisations (all groups exhibited apparently significant attitude change). Only when the justification to perform this discrepant act was relatively insufficient (incentive of $.50) and the audience was potentially persuasible (i.e., uncommitted) did improvisation increase the opinion change significantly beyond this level.

It should be noted that, in all three of these studies, a situational variable (i.e., incentive level in the studies by Carlsmith, Collins & Helmreich and Nel, Helmreich & Aronson) or a personality variable (i.e., conceptual level in the study by Harvey) produced interactions with the consequence factor, indicating reverse impacts of the consequences on opinions under various conditions. When these exogenous factors are ignored, however, main effects in only a single direction were apparent in two of the studies (i.e., excluding Nel, Helmreich & Aronson). This

finding suggests that the consequence of a given improvisation alone is insufficient to determine whether or not it will produce opinion change in its author. One also needs to know who the speaker is and under what circumstances he was induced to make the attitude-discrepant speech.

This conclusion is similar to one reached by Steiner and Darroch (1969) in their previously reported study. They argued, it will be recalled, that the interrelations among measures of content quality and opinion change were a joint function of two different aspects of the consequences of the action: (1) whether the audience agreed or disagreed with the stand of the subject's counterattitudinal speech, and (2) whether the audience knew that subjects were assigned to the stand or thought they chose it. Thus, all of these studies lead to the conclusion that different mediating processes probably operate in situations in which subjects expect different consequences to result from their discrepant actions. More specifically, they suggest that situations characterized by important action consequences tend to produce behaviors consistent with a dissonance interpretation of mediation, while situations characterized by unimportant consequences tend to produce behaviors consistent with an incentive interpretation of mediation.

Authorship of action. The limits of the "improvisation effect" have also been explored in three studies which considered whether the creative self-generative aspect of improvising is necessary to produce the enhancement of opinion change. In two of these studies (King & Janis, 1956; Zimbardo, 1965) subjects were induced to support positions contrary to their own views either by improvising a speech on this topic or by verbally delivering a speech previously prepared by the experimenter. In addition, both studies contained passively exposed control groups.

King and Janis reported significantly greater attitude change for improvisers than for either oral readers or passively exposed subjects, who did not differ from each other on this dimension. Zimbardo, on the other hand, found no differential attitude change between improvisers and oral readers, but reported that both varieties of counterattitudinal advocacy produced significantly more attitude change than did passive exposure.

The third study (Jansen & Stolurow, 1962) is of little help in evaluating these conflicting findings, since it did not use comparable conditions. It was, however, designed to test out the role of authorship in improvisation and so involved one group of subjects who improvised. A second group observed an improvised session and then attempted to imitate the performance of an improvisation subject. Several aspects of this study, however, make it difficult to evaluate its implications for the role of counterattitudinal improvisation in producing attitude change. First, the procedure involved a sequence of instances of "role-playing" in which subjects took roles which might or might not have been discrepant from their own beliefs. Furthermore, these sessions were spread out over several weeks with no control exerted over intervening activity. [6] Finally, and of most importance, the criteria for the success of "role-playing" in this study had nothing to do with opinion change, but concerned instead the extent to which certain job-related behaviors were learned.

Both King and Janis and Zimbardo expected to find greater attitude change among improvisers than among oral readers, though only the former obtained this result. An explanation of this discrepancy cannot, therefore, be made in terms of the theories presented in their original discussions

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[6] Watts (1967) showed that information seeking, conversations, and other intervening activity was, at least partially, a function of having actually authored a counterattitudinal statement. Only by controlling this activity can differences in the dependent outcomes be directly attributable to the manipulated independent variables.

(i.e., incentive and dissonance theory) but requires refinements not contained in their discussions.

The study reported in the next four chapters represents an attempt to develop and test more refined hypotheses based on Kelman and Baron's (1968a, b) functional approach. The remainder of this chapter will be devoted to (1) a detailed consideration of the King and Janis and Zimbardo studies, (2) a review of their possible interpretations, and (3) an elaboration of hypotheses derived from functional theory that are relevant to this area. Account will be taken of the evidence reported in this and the previous section suggesting that an understanding of the role of improvisation in inducing attitude change requires the development of mediational hypotheses (such as those based on the moral-hedonic distinction) limited to specific classes of situations. Accordingly, the present study was designed to consider (1) the particular circumstances surrounding the counterattitudinal advocacy (e.g., the consequences of the action), (2) the mode of performance of the action (e.g., improvisation, oral reading, etc.), and (3) the nature of factors mediating opinion change (e.g., motive arousal, effort, etc.).

Improvisation versus Oral Reading

The King and Janis (1956) and Zimbardo (1965) Studies

Both the study by King and Janis and Zimbardo's study have many features in common as the latter was in part an attempt to replicate the former. Thus, both studies asked some subjects to improvise a counterattitudinal talk, asked others to deliver a prepared speech **aloud**, and asked the remaining subjects to listen to or read a prepared speech silently. Both studies used before-after designs in which the premeasure was obtained some time prior to the experimental session. In addition, both used the pretext of a verbal ability testing procedure as the justification for asking subjects to perform the attitude-discrepant actions.

Despite the fact that Zimbardo was attempting to replicate the procedure originally used by King and Janis, there were sufficiently large differences to warrant a more detailed exposition of their respective methods. Three aspects in particular should be noted: (1) the apparent importance of the topic; (2) the experimental "set" or circumstances surrounding the action; and (3) the nature of the content to which subjects were exposed. [7]

Topic importance. King and Janis used, as the single issue in their study, the topic of "increasing the scope of the military draft." All subjects were asked to support this expansion in their speeches. This issue was selected because it was clearly of personal concern to all of their subjects (male college students) and equally clearly at odds with subjects' opinions regarding the draft.

Zimbardo, on the other hand, selected the relatively impersonal issue of "admission of Red China to the U.N." for use in his study. Furthermore, it was only one of two issues to which subjects were exposed during their experimental session. The other, "letter grading versus numerical grading," was used in a passive exposure condition which preceded each subject's active participation. Zimbardo argued that inclusion of this second topic, besides providing additional data, would tend to minimize "...the salience of the particular attitude issue used...in the oral speeches" (p. 110).

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[7] Another major difference between these studies was Zimbardo's manipulation of effort by means of varying delayed auditory feedback intervals. Fortunately, this manipulation was orthogonal to the improvisation manipulation of interest here.

Experimental "set." King and Janis asked each of their Improvisation and Oral Reading subjects "...to play the role of a sincere advocate of the point of view..." (p. 179) he was to support in his speech. Subjects were instructed that the experimenter was developing "a new oral speaking-test" and that their tape-recorded speeches would be presented to "a group of judges" to be evaluated. Subjects could, therefore, be expected to be oriented partially toward the content and partially toward their presentation.

For Zimbardo's subjects, on the other hand, orientation toward their delivery was considerably more prepotent than content orientation. He expected his procedure, including the previously mentioned passive exposure session, to produce strong acceptance of the psychometric rationale given for the study. Subjects were instructed, furthermore, to be "an active participant" so that the "oral presentation" aspect of their "verbal ability" could be evaluated by "others" (presumably other subjects). In addition, the oral ability pretext was, no doubt, enhanced by the presence of delayed auditory feedback used to manipulate effort orthogonally to the aspects of the design which are of interest here.

Content differences. Subjects in the King and Janis study, regardless of whether they were Improvisers or Oral Readers, were first given an opportunity to read to themselves a fully prepared statement supporting the position of their speech. Subsequently, Improvisation subjects were encouraged to expand upon the content of this speech during their recording sessions, while Oral Reading subjects were asked merely to read this same speech aloud into a tape-recorder. King and Janis reported that "...a substantial percentage

(of subjects) introduced new arguments or original elaborations of the prepared script into their talks..." (p. 180).

Zimbardo's procedure was somewhat different. Improvisation subjects in his study were given outlines from which to develop their talks with no pre-exposure to a fully developed message , while Oral Reading subjects read fully developed messages aloud without any pre-exposure. Despite the fact that Improvisation subjects were, in more than two-thirds of the cases (20 out of 28 subjects), exposed to their own new arguments or original examples, it seems quite likely that the main points of the arguments were not as well developed in their speeches as in those read by Oral Readers. In fact, Zimbardo reported that Oral Reading subjects rated the arguments of the prepared message as more "logical" than the Improvisation subjects rated their own arguments.

Interpretations

Functional approach. As noted earlier, Kelman and Baron (1968a, b) distinguished situations in which counterattitudinal content is the important motivational basis for change from those in which the discrepant action itself serves this dynamic function. The former they labelled moral dilemmas and the latter hedonic dilemmas. The dynamic forces responsible for change were called moral dissonance and hedonic dissonance, respectively. According to Kelman, Baron and Sheposh (1968), speaking or writing against an important personal value, as in the King and Janis study, should arouse moral dissonance [8] in those

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[8] Baron (1968) distinguished between moral dilemmas in which a societal value is violated and those in which a personal attitude is challenged. This distinction is not fully developed in Baron's paper and will not be used here. However, the idea that moral dilemmas may arouse doubt as well as various intropunitive reactions will be incorporated into the discussion of moral dilemmas.

subjects performing this action. Simply recording a speech on an impersonal topic, especially in the context of an evaluative aptitude testing session, like Zimbardo's, would be more likely to arouse dissonance of the hedonic [9] type, since the action, not the content, is ascendant for subjects.

For subjects experiencing a moral dilemma, improvisation should produce greater moral dissonance than an oral reading of a previously prepared speech. The logic behind this assertion is that improvisation, in this case, strengthens the moral implication of the action (i.e., commitment to the immoral position) by making the content appear to be more of a personal product of the subject. Subjects in a morally dissonant improvisation condition are, thus, more likely to experience guilt, doubt, or other intropunitive reactions [10] than are subjects who merely read a statement for which they feel little or no responsibility.

For subjects experiencing a hedonic dilemma, improvisation should produce less hedonic dissonance than an oral reading of a previously prepared speech. The logic behind this assertion is that improvisation, in this case, constitutes a more challenging and interesting task than simply reading a speech aloud. [11] Subjects in a hedonic oral

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[9] Sheposh and Baron (1968) distinguished between hedonic dilemmas which were intrapersonal and those which were interpersonal, specifying different motivational and resolution processes for each. The Zimbardo study was concerned with intrapersonal hedonic dissonance. The discussion here, therefore, will deal only with this type of hedonic dilemma.

[10] Guilt is likely to be engendered to the extent that the action violates a value held by the subject, while doubt is most likely to be aroused when the subject finds himself responsible for reasonable arguments and justifications of a position opposite to his own beliefs. The King and Janis study probably raised more doubt than guilt.

[11] This logic is analogous to that used earlier when the functional interpretation of the "improvisation effect" was reviewed.

reading condition are, thus, more likely to experience feelings of boredom, dissatisfaction with the task, and other extrapunitive reactions than are subjects who actively improvise.

To the extent that the dilemma is of one pure type or the other (entirely moral or entirely hedonic), the type of discomfort associated with the alternative dilemma should not manifest itself differentially in improvisation and oral reading conditions, nor should it reach an absolute level comparable to that attained in the motive-relevant conditions. Thus, if subjects are completely involved in the content of their discrepant action (as was perhaps the case in the King and Janis study), they should experience no hedonic arousal in either the improvisation or the oral reading condition (i.e., their scores on measures of hedonic dissonance -e.g., boredom - should be much lower than those of subjects who are focussed upon the action for its own sake). Measures of general discomfort, which fail to distinguish these motivational bases, should demonstrate opposite effects of improvisation vs. oral reading in the two dilemmas (i.e., they should exhibit a dilemma X mode of speech presentation interaction such that morally aroused improvisers and hedonically aroused oral readers would experience more discomfort than their low dissonance counterparts, morally aroused oral readers and hedonically aroused improvisers, respectively).

Functional theory proposes that the modes of resolution utilized by subjects experiencing the two dilemmas should be rather different. Thus, subjects disturbed by the implications of the content of their action are likely to reduce their moral dissonance by reassessing their actual position on the issue or by trying to make reparations for the harm inflicted to a person or cause. Only the attitude change mode was relevant to the King and Janis study. Subjects, by coming to believe what

they said, could reduce any guilt or doubt that might have been raised by the attitude-discrepant nature of their verbalizations. [12] The finding of greatest attitude change in the improvisation condition in the King and Janis study is, thus, consistent with this hypothesis, as well as with the dissonance and incentive hypotheses.

Subjects concerned with the worthlessness of their action, on the other hand, are not likely to find any of these modes of resolution appropriate (i.e., functionally relevant) to their dilemma. Instead, they are likely to reduce their hedonic dissonance by cognitively distorting, in the direction of enhancement, the value of the experiment and of their role in it. Zimbardo did not measure any of these dimensions. Instead, he measured attitude change toward the issue itself and found results which were inconsistent with both dissonance theory and incentive hypotheses (i.e., slightly, but not significantly, greater attitude change among Oral Readers). These results, however, could have been predicted on the basis of Kelman and Baron's functional theory.

Content mediation. The simplest alternative to the functional interpretation focusses on differences in content between the Improvisers and Oral Readers in these two studies. As noted earlier, Improvisers in the King and Janis study were exposed both to their own improvisations and to the prepared message, while Oral Readers were exposed twice only to the latter. In Zimbardo's study, on the other hand, Improvisers were

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[12] These predictions are the same as those made by the incentive hypothesis of King and Janis and the effort-mediated dissonance hypothesis proposed by Zimbardo. The difference predicted here is in terms of mediating processes. The functional approach does not require differences in message content or in effort in order to make this prediction. Rather, it holds that subjects in the Improvisation condition are more likely to label the speech as self-generated and, therefore, to experience more moral dissonance arousal.

exposed only to an outline and to their own (relatively illogical) improvisations, while Oral Readers read a formally prepared (relatively logical) message. The reported differences in attitude change in these two studies may simply be a function of better, more persuasive content having been present in the high change conditions (i.e., Improvisation in King and Janis' study and Oral Reading in Zimbardo's).

Incentive theory. Incentive theory, as discussed earlier, is incapable of adequately integrating these results. In both cases it would hold that the accompanying facilitative responses such as "implicit labelling" or "hand-tailoring" would operate only in the improvisation condition, thereby producing greater change in that condition. Moreover, its predictions should be more strongly confirmed to the extent that dissonance is not aroused. Since Zimbardo's study can be interpreted as somewhat less dissonance-provoking than the study by King and Janis, incentive predictions should have been most strongly demonstrable in that study, which they clearly were not.

Dissonance theory. A case could be made for an interpretation of these two studies based on dissonance theory. Since the magnitude of dissonance is a function of the importance of the cognitions (Festinger, 1957), and since Zimbardo's issue was less important to his subjects than that used by King and Janis, it might simply be that relatively little dissonance was aroused in his study. Dissonance theory, of course, would not predict the slight reversal observed by Zimbardo, but that was not significant in any case.

Testing the functional interpretation

In order to test the notions of functional theory (i.e., that different motives were aroused and that these resulted in correspondingly different, functionally-relevant modes of resolution) as an explanation for the discrepancies in these two studies, the following experimental paradigm was employed. It attempted to create independently the unique dilemmas previously suggested as operating in each of the studies. Accordingly, half the experimental subjects (Moral Dilemma subjects) were given a "set" intended to induce a high degree of concern with the content of a moral issue they were induced to support in a counter-attitudinal (i.e., immoral) speech. For the other half (Hedonic Dilemma subjects), a different "set" was created. Their instructions were intended to induce a high degree of orientation toward the delivery of a similar counterattitudinal speech. The instructions were also intended to eliminate any possible content orientation by suggesting that the substance of their particular speech was completely unimportant. In each of these conditions, half the subjects were required to improvise their attitude-discrepant speeches, while the other half simply read previously prepared speeches aloud.

In order to remove the possibility of interpreting attitudinal differences between Oral Readers and Improvisers as a function of content differences between conditions, Oral Readers, within each of the dilemmas, used speeches improvised by Improvisers who had the same dilemma instructions. Church (1964) has suggested that a yoked design of this type might produce spurious results in some cases. For the present study, there should only be a problem if a person's persuasibility is highly correlated (either positively or negatively) with the persuasiveness of a speech he produces. If persuasibility is taken as

an indication of general resistance, then there might be a positive correlation between a person's potential for influence and the persuasiveness of a speech he would produce. On the other hand, it might be argued, that since people low in persuasibility require better speeches in order to be persuaded, a compensatory mechanism would lead them to produce more persuasive speeches in a "self-persuasive" situation. There would then be a high negative correlation between persuasibility and persuasiveness.

The main point of interest here is that, if either interpretation is correct, the bias will take the form of a main effect difference between improvisers and oral readers. If the correlation is positive, there will be a spuriously greater opinion change for improvisers, while the reverse will be true if the correlation is negative. The specific opinion change hypothesis of this experiment, however, does not predict such a main effect, but rather an interaction of the performance factor with the type of dilemma. Since content differences might possibly produce a similar interaction (if for some reason the prepared speech was better than the speeches improvised under Hedonic Dilemma instructions, but was worse than those improvised under Moral Dilemma instructions), it is better, in the present case at least, to control content and accept the possibility of a main effect bias. [13]

In order to eliminate the possibility of a dissonance interpretation, in terms of differences in the importance of the issue-cognition, the

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[13] The "hand-tailoring" hypothesis (Hovland, Janis & Kelley, 1953) makes the same "improvisation effect" prediction as does Church's statistical argument in the case of a positive correlation. Possible "hand-tailoring" interpretations of the results of the present yoked design may also, therefore, be discounted by this logic.

same topic was employed in both the moral and hedonic dilemmas. [14] The compromise in selecting an issue necessitated by this consideration will be discussed more fully in Chapter III which reviews the pilot studies undertaken.

Hypotheses

The following general hypotheses, derived from functional theory, were tested in this study. [15] They are presented here in their most general form for two reasons: (1) to indicate the conceptual starting point of the present investigation and (2) to sketch the underlying logic of the functional interpretation so that the refined hypotheses considered in Chapter V may be seen in a general context. Hypotheses 1, 2, and 3 are concerned with the arousal of moral and hedonic dissonance, while hypotheses 4 and 5 are concerned with the resolution of motives so aroused.

Hypothesis 1. Moral Dilemma subjects will experience more guilt and uncertainty (i.e., moral dissonance) in the Improvisation than in the Oral Reading condition. Hedonic Dilemma subjects will experience less of both and will not do so differentially in Improvisation and Oral Reading conditions.

Hypothesis 2. Hedonic Dilemma subjects will experience more boredom and task-dissatisfaction (i.e., hedonic dissonance) in the Oral Reading than in the Improvisation condition. Moral Dilemma subjects will experience less of both and will not do so differentially in Oral

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[14] This does not mean that a dissonance interpretation based on differences in the importance of the action-cognition is not possible. Such an interpretation will, in fact, be considered later in this paper.

[15] Elaboration of the specific hypotheses will be postponed until Chapter IV after the procedures for testing them have been discussed in Chapters II and III.

Reading and Improvisation conditions.

Hypothesis 3. On measures of general discomfort, which do not take account of the different motivational bases of the two dilemmas, both high dissonance conditions (i.e., Moral Improvisation and Hedonic Oral Reading) will exhibit more discomfort than their low dissonance counterparts (i.e., Moral Oral Reading and Hedonic Improvisation).

Hypothesis 4. Subjects experiencing a Moral Dilemma are expected to resolve their doubt or guilt by coming to accept (i.e., changing their opinions to favor) the position advocated in their speeches. Thus, subjects in the Moral Improvisation condition should change their attitude toward the issue more than those in the Moral Oral Reading condition and both should exhibit more attitude change than Hedonic Dilemma subjects for whom this is not an appropriate mode of resolution.

Hypothesis 5. Subjects experiencing a Hedonic Dilemma are expected to resolve their boredom or task-dissatisfaction by cognitively distorting their perceptions of the task -- seeing it as more pleasant and valuable. Thus, subjects in the Hedonic Oral Reading condition should change (in a positive direction) their attitude toward the experiment and their role in it more than those in the Hedonic Improvisation condition and both should exhibit more task re-evaluation than Moral Dilemma subjects for whom this is not an appropriate mode of resolution.

CHAPTER II

METHOD

Subjects

Subjects were 185 male [1] undergraduates enrolled in introductory psychology courses at the University of Michigan during the Winter term, 1969. Each subject received one hour of experimental credit toward a three hour requirement by participating in the present study. Twenty-nine subjects were assigned to each of the four experimental conditions, while 23 subjects were assigned to each of three control conditions. [2]

Issue

Subjects in each of the experimental conditions were required to deliver speeches in support of the statement, "Ann Arbor landlords are justified, by local conditions, in charging high rents to students."

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[1] Males were selected for several reasons. First, pilot studies suggested they were less prone to withdraw from the experiment when given the opportunity in a procedure such as the one employed. A similar conclusion was also suggested by a review of data from several other studies which examined sex and volunteering (Lubalin, Kelman & Dabbs, 1968; Wilson, Patterson & Lysons, 1966; Wolf & Weiss, 1965). Finally, the two studies most directly addressed (King & Janis, 1956; Zimbardo, 1965) used subject populations of 100 per cent males and 75 percent males, respectively.

[2] The discrepancy in size of experimental and control groups arose because it was decided that differences in procedure between a pilot study (using only the experimental conditions) and the actual study were sufficiently small to permit combination of the data. Thus, data from the six subjects in each of four pilot conditions have been added to those for the 23 actual study subjects whenever both studies contained the same measures. Exceptions to this policy will be noted in presentations of the results.

This topic was selected because, at the time of this study, a rent strike, primarily by student tenants, was just beginning in Ann Arbor. This strike had almost universal student support and was clearly an important moral as well as financial issue. [3]

General Design [4]

A 2 X 2 factorial design was employed which manipulated the following two experimental variables: 1. TYPE OF DILEMMA. Subjects were assigned to either a Moral Dilemma or Hedonic Dilemma condition. The former were asked to deliver counterattitudinal speeches which would subsequently be used to persuade other people, while the latter were asked to deliver such speeches in preparation for a test of their oral verbal ability. 2. MODE OF PERFORMANCE. Subjects were assigned to either an Improvisation or Oral Reading condition. The former were asked to deliver extemporaneous speeches on the counterattitudinal topic, while the latter were asked simply to read such speeches aloud. In order to equate the content actually used in the Improvisation and Oral Reading conditions for a given dilemma, the speeches read by Oral Reading subjects were transcripts of speeches improvised by Improvisation subjects. The design was, therefore, yoked within each of the dilemmas.

Subjects completed a questionnaire which contained items designed to measure (1) the arousal of moral, hedonic and nonspecific dissonance,

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[3] A small pilot study (N=9) among a sample of students from the same population as the experimental subjects indicated moderate or strong disagreement with this statement for every subject (mean agreement was 1.44 on a 7-point scale, where 1.00 was the strongest disagreement category). In addition, these subjects rated the issue as relatively important (mean of 5.22) and the statement as relatively immoral (mean of 2.89) on similar agreement-disagreement scales.

[4] The details of this design were developed in a series of eight pilot studies. Since the experimental procedures are rather complex, an exploration of the preliminary investigations is best deferred until the next chapter so the reader may first be provided with a context for their consideration.

(2) a variety of resolutions (such as issue-and task-attitudes), and (3) several other mediating processes (such as effort and content factors). For one of the dependent measures (issue-attitudes) this design was expanded to a 2 X 3 factorial one by adding a third Content-yoked Control group in each dilemma condition whose task (i.e., mode of performance) involved reading the same speeches passively to themselves. In addition, a No Communication Control group was employed to provide a baseline measure on this same dependent variable.

Procedure

Overview. Subjects in the experimental conditions reported to the Group Dynamics Laboratory individually at a rate of six to eight subjects per hour. [5] Accordingly, there were always other subjects (usually in the same condition) present in the experimental room during each subject's experimental hour, but these other subjects were, generally, working on a somewhat different part of the experiment.

The independent variables were manipulated primarily through the distribution of four different forms of experimental instructions corresponding to the four cells of the 2 X 2 factorial design. After subjects had read these descriptions and decided to participate in the remainder of the study they were given time to prepare their speeches, which were then tape-recorded in individual sessions in a separate recording booth. Upon returning to the main experimental room, subjects completed a questionnaire containing manipulation checks, as well as measures of mediating and dependent outcomes.

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[5] Pilot studies had indicated that this would permit the tape-recording of speeches by one individual at a time at a fairly uniform and unhurried rate in the speechmaking phase of the experimental session.

Organization and timing of experimental treatments. The content-yoked format of the present study required that every Improviser participate in the experiment prior to his matched Oral Reader and content-yoked Control subject so that a transcript of his speech could be prepared. The sheer physical transcription problem necessitated a one week delay. Moral and Hedonic Improvisers were run in two separate sessions on Thursday and Friday of the first week of the study, respectively. Content-yoked Control subjects for the Moral Improvisers were run on Wednesday of the next week. On that Thursday the Moral Oral Readers were run and on Friday the remaining conditions (including the No Treatment Control) were carried out in three separate sessions. Subjects were assigned to one of these seven sessions on the basis of availability, but without knowledge of any part of the study. Within a given session for which content matching was required, subjects were randomly assigned a speech from the appropriate group.

Introduction to the experiment. When each subject arrived at the Group Dynamics Laboratory he was greeted by an undergraduate male research assistant (E_1) and shown into a room with a rather large table and chairs for eight or nine subjects. E_1 gave each subject one of four forms of the experimental "Instructions" and suggested that the remainder of the procedure was self-explanatory. In every case, the first paragraph of the "Instructions" was the same and read as follows:

> People are often called upon in their daily life to support positions which are part of the various roles they play or positions they hold in society. Usually the ideas which they are required to support are in agreement with their own beliefs. But sometimes, as when a majority of a group they belong to has voted to support a view opposed to their own, they may "live with" the group's decision and defend the group's position to other people.

The remaining paragraphs manipulated the two sets of independent variables and offered subjects an opportunity to choose not to participate in the experiment.

Manipulation of the type of dilemma. For Moral Dilemma subjects the next three paragraphs attempted to convince subjects that they would be making speeches which would successfully influence other people. It was assumed that these instructions would produce a moral dilemma in subjects by convincing them that their action would involve manipulating unsuspecting people, like themselves, to espouse an unpopular point of view which in turn might bring harm to this cause (in which they themselves believed). Thus, the following paragraphs constituted the major manipulations of this dilemma: [6]

> Although it has not yet been conclusively demonstrated, recent research suggests that the personal beliefs of a speaker make very little difference in how much he is able to persuade other people to accept a particular set of ideas. Thus, an appropriately persuasive speech on a given topic should produce just as much of an effect on its audience whether the speaker believes what he is saying or not. The present research project is designed to give convincing proof to this hypothesis.
>
> In order to do the necessary experiment we need a number of persuasive speeches by people with varying views on an issue. Previous research has shown that the best way to do this is to select an issue about which people have varying views and then to ask everyone, regardless of their own view, to support one position on the issue. In this way some people will be supporting what they are speaking about, while other people will not.
>
> A pilot study, that we did earlier, indicated that there is a wide spread of opinion about the following topic, so we are asking all subjects today to support the statement, "Ann Arbor landlords are justified, by local conditions, in charging high rents to students." Your task today, therefore, is to make (read) a persuasive speech in support of this statement as if you are a sincere advocate of this position, regardless of your own beliefs on this topic. We will tape-record your speech and use it to persuade the subjects in our experiment of the validity of this view.

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[6] In the third paragraph the underlined word was used in the Improvisation form, while the word in parentheses was used in the Oral Reading version.

For Hedonic Dilemma subjects a different set of paragraphs followed the introductory one and constituted the major manipulation of this dilemma. They were designed to portray the subject's task as something of little consequence by presenting it as merely a practice session. It was assumed that these instructions would produce a hedonic dilemma in subjects by leading them to see their action as almost totally meaningless and of little intrinsic value. An attempt was also made to lessen the subject's content orientation by suggesting that it would be his "delivery" in the actual session which would be important to us and that this would be relatively unaffected by his beliefs on the matter. These paragraphs were as follows: [7]

> Although it has not yet been conclusively demonstrated, recent research strongly suggests that the personal beliefs of a speaker make very little difference in how well he is able to deliver a speech. Thus, a talk delivered by any particular person should demonstrate his oral verbal ability whether the speaker believes what he is saying or not. The present research project is designed to give convincing proof to this hypothesis.
>
> In order to test this hypothesis we need a number of speeches by people with varying views on an issue. Previous research has shown, however, that many people are nervous or tense in their first attempt to record such speeches, so usually their first talks are not very good indicators of their verbal ability. For this reason we do not intend to analyze the recording you will make today. We simply want you to become familiar with the procedures we use so that we can get a good measure of your oral ability in another session next week. You will have a chance at today's recording session to indicate if this same time next week will not be convenient for you. Otherwise you are expected to return for a session then, at which time we will arrange for you to listen to the tape you make today, before we erase it.
>
> For today's session we selected a topic similar to the ones you will be asked to speak on later when your oral ability will actually be tested. In order to make sure that we have some people who believe in what they are saying and

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[7] In the fourth paragraph the underlined word was used in the Improvisation form, while the word in parentheses was used in the Oral Reading version.

> some who do not, we have selected issues about which people have varying views and are asking everyone to support one position on each issue.
>
> A pilot study, that we did earlier, indicated that there is a wide spread of opinion about the following topic, so we are asking all subjects today to deliver their practice speeches in support of the statement, "Ann Arbor landlords are justified, by local conditions, in charging high rents to students." Your task today, therefore, is to make (read) a trial speech in support of this statement, regardless of your own beliefs on this topic. We will tape-record your speech but use it only to give you an opportunity to hear yourself before you are asked to deliver your actual speeches.

Manipulation of the mode of performance. For Improvisation subjects, the paragraph following the manipulation of the dilemma explained that improvising was a relatively more effective way than reading prepared statements to persuade others or to demonstrate oral verbal ability. The paragraph was as follows:[8]

> In order to make the best experimental test of this hypothesis we have decided to have you make the type of speech which has, in the past, been most successful in persuading other people to accept the content of a message (demonstrating people's oral verbal ability). As you probably know, off-the-cuff or improvised speeches tend to be much more effective in persuading other people (show people's oral ability much more effectively) than formally prepared statements. You will, therefore, be given only ten minutes to think about and prepare notes for your five minute speech. To help make your task a little easier, we have prepared a brief outline of some arguments commonly made in support of this position. Do not feel constrained either to use them or to limit yourself to them. Feel free to include additional arguments, illustrations or elaborations in your own speech.

For Oral Reading subjects, the paragraph following the manipulation of the dilemma explained instead, in an analogous fashion, that reading prepared statements was a relatively more effective way than improvising to persuade others or to demonstrate

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[8] The underlined words were used in the Moral form, while the words in parentheses were used in the Hedonic version.

oral verbal ability. That paragraph was as follows: [9]

> In order to make the best experimental test of this hypothesis we have decided to have you make the type of speech which has, in the past, been most successful in persuading other people to accept the content of a message (demonstrating people's oral verbal ability). As you probably know, formally prepared statements tend to be much more effective in persuading other people (show people's oral ability much more effectively) than off-the-cuff or improvised speeches. You will, therefore, be given a speech to read which was previously prepared on this topic. Before going to our recording booth to receive your speech, however, you may wish to prepare yourself by taking 10 minutes or so to look over a brief outline of some arguments commonly made in support of this position. In addition, you may use the time to review notes made in preparing your speech, so that it will not be totally unfamiliar when you are asked to read it.

Introduction of choice. The concluding paragraph of all four versions of the "Instructions" contained instructions designed to induce a sufficient degree of choice about participation in the experiment for the arousal of dissonance to occur. At the same time, these instructions were designed so as to induce a maximum number of decisions to participate in order to avoid the problems of self-selection. This paragraph read as follows:

> Your help in preparing for our study is extremely important to us and you can be sure we will really appreciate it. However, it is not our policy to coerce anyone who has a good reason for not taking part to participate. So, if you feel that you simply cannot participate in this study, you should check the box at the bottom of this page and await further instructions. You will not lose experimental credit. Everyone else should remove the booklet containing further instructions, the outline, and notes from Envelope #1 on the table in front of him and begin the preparation for his speech.

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[9] The underlined words were used in the Moral form, while the words in parentheses were used in the Hedonic version.

Speech preparation. Improvisation subjects found the following "Speech Preparation Instructions" in Envelope #1:

> On the next page is a statement of the topic you are to support and an outline of some arguments commonly made in support of this position. You should use the outline as a springboard from which to begin your consideration of this topic. You may delete or add any arguments you wish and should feel free to elaborate and illustrate your points.
>
> You will be allowed 10 minutes to make notes for your speech on the scratch paper following the outline before going to the recording booth for 5 minutes to record your statement. You will probably make a better speech if you do not attempt to write it out fully but simply note the points you wish to make.

In addition, Improvisation subjects found a copy of the outline which appears in Appendix A and several pieces of blank paper on which to make notes.

Oral Reading subjects, on the other hand, found the following "Speech Preparation Instructions" in Envelope #1:

> On the next page is a statement of the topic you will be supporting in this session and an outline of some arguments commonly made in support of this position. You should use the outline to familiarize yourself with the domain to be covered in the speech. After the outline you will find the notes made in preparing the text of the speech you will be reading. You are to use them to acquaint yourself with the speech you will be asked to read aloud. You will be allowed up to 10 minutes to examine the outline and the notes before going to the recording room for 5 minutes to record the statement you will receive there.

In addition, Oral Reading subjects found a copy of the same outline and of the actual notes made by one Improvisation subject in the same dilemma condition.

Recording session. When subjects had completed their preparations, they reported individually to a male graduate student experimenter (E_2) who was located in an experimental cubicle containing a chair, desk, tape-recorder and microphone. Subjects were seated in another cubicle across the hall and asked to wear earphones which they found on the table together with a microphone, clock, and, for Oral Readers, a typescript

of their speech.

Subjects received instructions on recording procedures from E_2 through their headphones.[10] In the course of the instructions E_2 briefly reiterated the condition to which the subject had been assigned[11] and then allowed up to five minutes for the subject to record his speech.

Dependent measures. After completing their recordings subjects returned to the room from which they had come to complete a questionnaire. For Moral Dilemma subjects the form was simply labelled "Questionnaire" and contained the following introductory sentence:

> Since the major interest of the present research is with the impact on others of speeches from people having different positions on the issue at hand, the first question in this questionnaire concerns your own opinion on this topic.

Hedonic Dilemma subjects' questionnaires, on the other hand, were prominently labelled "PRACTICE FORM" and contained the following introductory sentence:

> Since the major interest of the present research is with the effect of people's beliefs on their oral ability, the first question in this questionnaire concerns your own opinion on this topic.

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[10] The four versions of these instructions to subjects corresponding to the four experimental conditions may be found in Appendix B.

[11] Unfortunately several factors made either a single- or double-blind procedure impractical in the present experiment. It was impossible to prevent either experimenter from knowing whether a subject was an Improviser or an Oral Reader since the preparation of typescripts from the tape-recorded speeches required that a week intervene between the running of these sets of conditions. In addition, the practice session format for the Hedonic Dilemma subjects required that they be asked to agree to subsequent participation. The only time that subjects could be approached individually on this point was during the recording session, when they were alone with E_2. Finally, the sheer coordination problem of providing each Oral Reading subject with the speech that matched the notes he used during the speech preparation period required communication between E_1 and E_2 at the time a subject reported to the recording booth.

After this first sentence the instructions were identical for all subjects, as were the questionnaire items themselves. [12]

Nineteen of the 25 questionnaire items were complete sentences accompanied by 7-point scales of agreement-disagreement, labelled at each point as follows: (1) "Strongly Disagree"; (2) "Moderately Disagree"; (3) "Slightly Disagree"; (4) "Neither Agree nor Disagree"; (5) "Slightly Agree"; (6) "Moderately Agree"; (7) "Strongly Agree." The other six items were also complete sentences, but each was accompanied by a unique 7-point scale appropriate to the item content. The first item on the questionnaire, the issue-attitude, was the topic of the talk (i.e., "Ann Arbor landlords are justified, by local conditions, in charging high rents to students"). Most of the remaining questions assessed possible mediating processes (e.g., "Making this speech made me feel guilty.") and proposed resolution processes (e.g., "My participation was scientifically valuable."). Specific items within these general rubrics will be considered in detail in Chapter IV, when the results are presented.

Three items, which fall outside these general categories, were designed to check on the success of the manipulations. One asked subjects whether they "...were more concerned with (their) delivery or with the content of (their) speech" and offerred them a 7-point response scale labelled at the ends and in the middle as follows: (1) "Delivery"; (4) "Equally with both"; and (7) "Content." Since this measure simultaneously tapped the motivational concerns of both dilemmas, it is the best single available check on the manipulations. Hereafter, it is referred to as the relative content orientation item because (1) it measures both concerns (i.e., it is relative) and (2) high scores

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[12] A complete copy of these instructions and of the items which appeared in the questionnaire may be found in Appendix C.

indicate strong content orientation (conversely, low scores indicate strong performance orientation).

The two additional manipulation check items asked subjects to indicate the extent to which they were involved (1) "...with the ideas (they) were expressing" and (2) "...in producing a good oral performance" on 7-point scales labelled at the endpoints and in the middle as follows: (1) "Not at all involved"; (4) "Moderately involved"; and (7) "Extremely involved." Hereafter the first item is referred to as the absolute content orientation score, while the second is called the absolute performance orientation score. Each of these measures was designed to assess subjects' concerns with the motivational basis of only a single dilemma (i.e., the content for the first item and the performance for the second).

In addition to the questionnaire items, dependent measures included the time it took each subject to deliver his speech and several indices derived from a content analysis of the improvised speeches. The content analysis was performed by E_1 about two months after the completion of data collection without knowledge of the experimental condition of the speech-maker. In addition, E_2 independently coded a random sample of eight speeches in order to determine the coding reliabilit

The major indices, in addition to word count, were (1) the number of arguments drawn from the outline, (2) the number of nonoutline arguments used, and (3) the number of resistant (i.e., pro-student, pro-strike, or anti-landlord) arguments in the speech. An argument was arbitrarily defined as the smallest unit conveying a point comparable to the points contained in the outline. Repetitions

were counted as separate arguments even though a more global evaluation of the speech might have credited it with expressing only a single idea.

A brief questionnaire was prepared for nonvolunteers, containing several open-ended questions that asked why they had refused to particpate, whether they had any suspicions about the procedure, and what their opinion on the issue was.

For the 24 subjects (i.e., six in each of the experimental conditions) originally constituting the pilot study there was an additional measuring instrument, a "Postexperimental Questionnaire" completed at the end of their experimental session. This contained a series of open-ended questions which became progressively more focussed on suspicions and hypotheses of the subjects. [13] This instrument was not used in the final study because data from the pilot study, reported in Chapter III, suggested that the procedures employed in this study were subject to only minor contamination by such factors as suspicion.

Content-yoked Control groups. In order (1) to separate the impact of the speech content and of the mode of performance on issue-attitudes and (2) to assess between-dilemma differences in content persuasiveness uncontaminated by the dilemma instructions, two control groups were added. In one of these, subjects read the speeches produced in the Moral Improvisation condition silently to themselves, while in the other the speeches produced by Hedonic Improvisers were employed.

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[13] The exact instructions and questions used are reported in Appendix D.

All subjects in these two conditions were run in one large group in a University classroom. Upon arrival each subject was handed a booklet containing a sheet of instructions, a typescript of a previously improvised speech, and a questionnaire. The "Instructions" did not attempt to establish either a moral or hedonic dilemma. Rather, they created a neutral context in this regard by stating that the study was concerned with the process of forming personality impressions of a speaker solely from a speech he had made.[14]

When subjects had finished reading their speeches silently to themselves, they answered a "Questionnaire" which was preceded by the following instructions:

> Since your own opinion on the topic discussed in the speech you just read may influence the way you evaluate the speaker it is important for us to know how you feel about this topic. Therefore, the first question at the bottom of this page asks about your own opinion on this issue. The remainder of the questions are designed to see how well you can evaluate the speaker's personality.

The first question was identical to that used in the experimental conditions to assess subjects' attitudes toward the issue of "justification of the landlords." The remaining questions on personality attribution served simply to disguise the purpose of the experiment and were not analyzed. Subjects in these conditions, as in all of the conditions, were debriefed by means of written feedback immediately following their participation and again, in somewhat more detail, when the entire experiment was completed.[15]

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[14] The exact "Instructions" may be found in Appendix E.

[15] All subjects exposed to pro-landlord speeches (i.e., excluding the No Treatment Controls) were also given a statement prepared by the Tenants' Union to counteract possible change induced by their participation.

No Treatment Control group. One additional control group was employed in which subjects were not exposed to a speech at all. Instead, they were informed that they were participating in a pilot study designed to assess student opinion on topics of campus, local, and national concern. The ninth of 20 items to which they were asked to respond was a statement of the topic of the speeches used in the other six conditions. The first scale accompanying this item was identical to the agreement-disagreement scale employed in other conditions to assess issue-attitudes. None of the responses to other items was evaluated.

CHAPTER III

PRELIMINARY INVESTIGATIONS

A total of eight preliminary studies preceded the final experiment reported in Chapters II, IV, and V. They involved several objectives including (1) selecting an appropriate issue, (2) minimizing suspicions concerning the real or purported purpose of the study, and (3) attempting to create the conditions requisite to a test of the a priori hypotheses.

Issue Selection

Three of the pilot studies (PS1, PS2, and PS7) were specifically designed to gather information about the characteristics of issues appropriate for use in the paradigm discussed in the previous two chapters. The remaining studies, however, were also useful in evaluating the effects of issue factors.

PS1: Initial issue selection

The major emphasis of the initial selection process was to locate issues which would produce moral dilemmas when subjects were content oriented. It was assumed that the creation of hedonic dilemmas could be accomplished with the same issue, provided the content was sufficiently de-emphasized.

Four major criteria were employed in this issue selection: (1) In order to insure that subjects would be arguing counterattitudinally, issues were sought which had a relatively extreme mean (and a relatively low variance) on the attitudinal scale employed. (2) To provide the

necessary implications in moral dilemma conditions, issues were sought which had relatively extreme scores on a measure of issue morality-immorality. (3) Further, it was felt that an adequate comparison of the present interpretation and that made by cognitive dissonance theory required that the issue be a relatively important one for experimental subjects. Issues were, therefore, sought with high mean scores on a scale of issue importance. (4) Finally, it was felt that subjects would be unlikely to change their opinions on some extremely significant moral issues (especially those involving basic values). It was, therefore, decided to eliminate issues for which subjects reported (on an appropriate rating scale) that their attitudes were extremely secure.

On the basis of answers to four items for each of 36 opinion statements by a group of 27 subjects (13 male, 14 female) four statements best fulfilling the above criteria were selected for further investigation. [1]

PS2: Outline creation

In the second pilot study 20 subjects (ten of each sex) were instructed to write essays supporting various combinations of three of the four statements selected in pilot study #1. After writing each essay subjects answered several questions about their reactions to the task and to the issue. The essays themselves were used as a source of arguments to be included in an outline presented to subjects in subsequent pilot studies, while the answers to the questions were used to select the final issue. [2]

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[1] The specific items and the mean scores on each of the criteria may be found in Table 1 in Appendix F.

[2] The specific items critical to this decision and the means obtained by subjects writing on each of the topics are reported in Table 2 in Appendix F.

A variety of indicators suggested that the "torture" issue, more than the other three issues, was likely to produce a moral dilemma (i.e., it did so even for the coerced subjects in this pilot study). Moreover, it appeared to have produced very little arousal of hedonic dissonance. There was also a tendency toward greater agreement with the supported position after the essay writing than in the first pilot study, although this might simply represent regression.

PS3-6: "Torture" issue employed

In four studies (to be reported in somewhat more detail later in this chapter) subjects were asked to argue in favor of "torture during wartime." Regardless of the specific instructions used, subjects in the Hedonic ("action oriented") Improvisation condition were generally at least as much (1) concerned with the content of their action , (2) morally aroused, and (3) influenced in the advocated direction, as subjects in the Moral Improvisation conditions. The most reasonable conclusion to be drawn from these data was that the initial assumption, that de-emphasis of the content would eliminate content orientation, was probably not true for a topic as morally loaded as the "torture" issue.

This conclusion led to a question whose answer was crucial for the subsequent research strategy; namely, whether moral and hedonic dilemmas could both be created using the same issue. The research possibilities open, given the alternative answers to this question, were quite different. To the extent that it was not possible, the particular distinction between the procedures of King and Janis (1956) and Zimbardo (1965) discussed previously would be unimportant relative to the differences in the issues they used. Furthermore, tests of all

but the within dilemma differences predicted by functional theory would be impossible. Moreover, even the success of within dilemma functional predictions under these circumstances would be open to easy reinterpretation by cognitive dissonance theory as a function of issue importance. That is, the unimportant amoral issue used in producing hedonic dilemmas would not be expected to produce dissonance of sufficient magnitude to require opinion changes. Thus, acceptance of this possibility would lead to considerable inelegance, both from the point of view of research design and from the point of view of theoretical relevance.

Making the alternative assumption, that the creation of both types of dilemmas was possible with the same issue, would not involve these theoretical sacrifices. In fact, it is the only assumption that would allow a complete test of the hypothesized relations both between and within the different dilemmas. Of course, this alternative had the obvious weakness that it might not be true, but, from the point of view of functional theory, it was the only option worth pursuing. Accordingly, a seventh pilot study was done to select a new issue.

PS7: New issue selection

The procedure of the seventh pilot study was identical to the first (PS1) except that six different attitude statements were rated by a new sample of 9 male subjects. [3] These new statements involved a compromise in that they (1) involved somewhat less explicitly moral questions than those in the previous pilot study (PS1) and (2) simultaneously contained some hedonic implications. The statement ultimately selected, using criteria similar to those employed in the first pilot

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[3] Since female subjects appeared to volunteer less than male subjects in the initial attempt to test this paradigm (PS3) it was decided that only male subjects would be used in the remaining pilot studies and in the final study.

study, was "Ann Arbor landlords are justified, by local conditions, in charging high rents to students." Because this study was done at a time when a student-organized rent strike was beginning in the Ann Arbor area, there was very general disagreement with this statement (mean = 1.44 on a 7-point scale). Also,subjects rated (1) this issue as relatively important (5.22), (2) this statement as relatively immoral (2.89), and (3) their opinions as relatively secure (5.22). When this issue was employed in a subsequent pilot study, concern with content was no longer paramount among Hedonic Dilemma subjects, but was apparent for Moral Dilemma subjects. [4]

Creating the Conditions

The other major purpose of the pilot studies was to find (1) a set of operations that would produce concern with the morality of the content of their action among subjects given a moral dilemma "set" and (2) another set of operations that would produce concern with the intrinsic worth of the action itself among subjects given a hedonic dilemma "set." Five pilot studies (four with the "torture" issue and one with the "landlord" issue) were carried out in an attempt to establish such operations.

PS3: Radio debate and verbal ability [5]

Moral dilemma. The first attempt to create a moral dilemma involved telling subjects that their counterattitudinal speeches on the "torture"

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[4] These same effects were not found in the final study itself despite the fact that there were only minor procedural differences from this pilot study. A more complete discussion of the role of issue factors will be postponed until the final chapter so that the major data of the present investigation may first be reviewed.

[5] Means on the various items cited for this pilot study appear in Table 3 in Appendix F.

issue would be used in a radio debate on the campus radio station. Several things were done to make this seem realistic, including a taping session in a radio studio (in the speech department). Although these conditions tended to produce the desired outcomes (i.e., more guilt, doubt, and issue-attitude change and less hedonic dissonance arousal among Improvisers than Oral Readers) several factors encouraged the search for new moral dilemma instructions in subsequent pilot studies: (1) One-third of the subjects initially assigned to the Improvisation condition refused to make a speech, while no self-selection occurred in the Oral Reading condition; and (2) more than half the subjects, in both conditions, reported (on an open-ended postexperimental questionnaire) suspicions about the purported purpose (i.e., a radio debate) of the study.

Hedonic dilemma. The first attempt to create a hedonic dilemma involved telling subjects that their counterattitudinal speeches were being made as part of a test of their verbal ability. Several things were done to make this seem realistic including (1) telling subjects that how they said what they said was more important than what they said and (2) taping their speeches in little experimental cubicles in the Group Dynamics Laboratory. These conditions failed to produce the desired outcomes. There were only small and inconsistent differences between Improvisers and Oral Readers on measures of hedonic dissonance arousal. Moreover, there were large differences between these two conditions on measures of moral arousal and issue-attitude change which essentially paralleled the findings for Moral Dilemma subjects (i.e., greater moral arousal and resolution among Improvisers than among Oral Readers). Since there was also an analogous but larger self-selection bias among Hedonic Dilemma subjects than among Moral Dilemma subjects it

was concluded that subjects in these conditions (particularly Improvisers) had probably experienced moral and not hedonic dissonance as originally planned. Modifications were made in subsequent pilot studies in an attempt to remedy this problem.

PS4: Speech department and erased practice speech [6]

Moral dilemma. In order to make the task more believable to Moral Dilemma subjects the radio debate deception was replaced by one stating that the speech would be used in a speech department class. It was hoped that the content would still seem sufficiently important to Moral Dilemma subjects to arouse the appropriate levels of guilt. Data from the Moral Improvisation condition, however, suggested that the prevalent orientation was largely toward performance factors, given this "speech department" set (i.e., in terms of the manipulation check measures discussed in Chapter II, they were less relatively content oriented than Hedonic Improvisers and slightly more absolutely performance oriented than absolutely content oriented). Since oral performance, not content, was seen as paramount, it was decided not to conduct the corresponding Moral Oral Reading condition.

Hedonic dilemma. The Hedonic Dilemma instructions differed from those used in the previous pilot study in one major way; namely, they described the particular speech subjects were to make in this experimental session as being solely for practice. Subjects were told that they would make "real" speeches in another session and that the practice tapes made in their current session would be erased without being analyzed. It was hoped that this would sufficiently reduce the

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[6] Means on the various items cited for this pilot study appear in Table 4 in Appendix F.

content orientation of Hedonic Dilemma subjects so that hedonic dissonance, rather than moral dissonance, would be aroused. While the data indicated a slight tendency for Hedonic Oral Readers to be more action oriented and more hedonically aroused than Hedonic Improvisers, this appeared to be more than countered by the strong tendency of the latter to be more concerned with the content of their speech and more morally aroused than the former. Furthermore, over one-third of the subjects in both conditions expressed suspicions that the tape would not be erased. The instructions were, therefore, altered for use in the next pilot study.

PS5: Radio broadcast and non-erased practice speech [7]

Moral dilemma. In an attempt to reinstate concern with the speech content among Moral Dilemma subjects, they were again told that their speeches would be broadcast on the radio. However, in this pilot study they were told nothing about the nature of the radio program itself (i.e., it was not represented as a debate). With this change and a more believable rationalization of the reasons for selecting the "torture" issue, which had been incorporated in the previous pilot study, it was hoped that the suspicions found in the first attempt to use a radio format would be eliminated. The data proved quite discouraging in this regard since two-thirds of the Improvisers expressed doubts about the use of their tapes on the radio. Furthermore, there was again a self-selection problem since one-third of the subjects asked to improvise refused to volunteer. For these reasons the corresponding Moral Oral Reading condition was not conducted.

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7 Means on the various items cited for this pilot study appear in Table 5 in Appendix F.

Hedonic dilemma. The major change in the instructions given to Hedonic Dilemma subjects in this pilot study involved telling them that their practice tapes would not simply be erased. Rather, these initial tapes would be available for them to listen to before making their "real" speeches but would not themselves be analyzed as measures of their oral verbal ability. It was hoped that this would eliminate their suspicions, lessening their feelings that the content would be evaluated and, therefore, reducing their content orientation while increasing their action orientation. Suspicions of the erasure procedure among Improvisers were clearly reduced (i.e., only one subject expressed any suspicions of this sort), but the content orientation among Improvisers was still as strong as their action orientation. Furthermore, they reported experiencing less hedonic dissonance than their Moral Dilemma counterparts. In light of these findings (and a twenty-five percent refusal rate), it was decided not to conduct the corresponding Hedonic Oral Reading condition and to try further changes in the next pilot study.

PS6: Persuading others and diagnosing beliefs [8]

Moral dilemma. A completely new approach was taken to creating a moral dilemma in the sixth pilot study. Subjects appeared at the Group Dynamics Laboratory rather than at a radio studio and were told that they were taking part in a study of persuasion. They were told that the study concerned the ability of people (i.e., themselves) to persuade others when they themselves either did or did not believe in what they were saying. It was also suggested (1) that those who did not believe what they were saying would be as effective in persuading others as those who did and (2) that the type of speech they were being

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[8] Means on the various items cited for this pilot study appear in Table 6 in Appendix F.

asked to deliver (i.e., either an improvised or orally read speech) was the most effective type of speech possible. Each subject then made his counterattitudinal speech in support of the "torture" statement. It was hoped that this procedure (1) would be believable in the context of a psychology experiment and at the same time (2) would produce the requisite concern with the moral implications of the content.

This manipulation was rather unsuccessful in meeting the first goal, as five of nine Moral Improvisers and one of eight Moral Oral Readers expressed suspicions that the speeches would not be used to influence other people. Data relevant to the second goal indicated that Moral Improvisers were slightly more concerned with the content and slightly more morally aroused than Moral Oral Readers. However, Hedonic Improvisers reported more of each of these than did subjects in either of the Moral Dilemma conditions. In addition, Moral Dilemma subjects, especially in the Oral Reading condition, reported more concern with their performance and more hedonic arousal than did Hedonic Improvisers. On the basis of these data it was decided that some major change would have to be made in later pilot investigations.

Hedonic dilemma. The new hedonic dilemma instructions also involved a rather radical departure from previous pilot studies. They involved asking subjects to make counterattitudinal speeches as part of a study designed to diagnose their true beliefs, not from the content of their speeches, but rather from how they said them. Props such as nonfunctional GSR recording electrodes were used to increase the apparent reasonableness of this rationale. The preliminary nature of the research endeavor was stressed so as to make their particular contribution seem to be of relatively little value to the important goals of the research as a whole. It was hoped that these instructions

would be believed and would produce the desired concern with the intrinsic worth of the action among Hedonic Dilemma subjects. Although the purported purpose of the experiment was accepted by eighty percent of the Hedonic Improvisation subjects, the data suggested that they were somewhat more content oriented than action oriented and somewhat more morally aroused than hedonically aroused. In fact, they were both more concerned with the content and more morally aroused than were the Moral Improvisers. Accordingly, it was decided not to conduct the corresponding Hedonic Oral Reading condition and to make some major change in subsequent pilot studies.

PS8: New (landlord) issue and old instructions

It was at this point in the series of pilot studies that the previously mentioned selection of a new issue took place. Then, instead of searching for new manipulations, an attempt was made to use previously employed procedures with the new topic. It was felt that this continuity with earlier pilot studies might indicate the nature of the changes brought about by the new issue and might suggest procedural changes that would be likely to produce the desired manipulations.

The results of this pilot study, however, were sufficiently encouraging to lead to the adoption of this procedure in the final study. Since the details of this procedure were, for all practical purposes, presented in the previous chapter, they will not be discussed here. Suffice it to say that the Moral Dilemma condition instructions were quite similar to those used in PS6, while the Hedonic Dilemma condition instructions were quite similar to those used in PS5. Thus, Moral Dilemma subjects were told that their speeches would be used to effectively persuade other people, while Hedonic Dilemma subjects were

told that they were making practice tapes to which they would listen before their oral verbal abilities were actually assessed.

Suspicions. Evidence bearing on acceptance of the announced purpose of the study comes from the "Postexperimental Questionnaire" administered in this pilot study. Answers to the first six open-ended questions (Appendix D) were read independently by E_1 and E_2 approximately two months after the experiment was completed and suspicions among Moral Dilemma subjects that their speeches would not be used to persuade others were noted. Both raters agreed that, among the twelve Moral Dilemma subjects, only two (both Moral Oral Readers) expressed any suspicions of this sort. Suspicions among Hedonic Dilemma subjects that their speeches would actually be used somehow (i.e., they would not be used solely for practice) were noted in the same fashion. Both raters were again in agreement that only one subject, of the twelve given hedonic dilemma instructions (an Oral Reader), expressed any suspicion that his session would count or that he would not be asked to return for a second experimental session.

The first six open-ended questions on the "Postexperimental Questionnaire" were also examined for any suspicions of the self-persuasion purpose of the study. Again, both raters were in agreement in reporting that only one out of the 24 subjects (a Moral Oral Reader) indicated any such suspicion. In answer to the remaining two open-ended questions on this instrument, after being explicitly told that the declared purpose of the study was not true, an additional five subjects were able to suggest self-persuasion as an alternative purpose of the study. Fully three-quarters of the subjects, however, were still unable to guess the actual purpose even under these circumstances. Overall, bias effects from awareness of the experimental purpose or hypotheses

were probably not important factors in the present study. Accordingly, the final study did not include measures of this sort.

Manipulation checks. The earlier pilot studies were relatively unsuccessful in producing the desired conditions. Clearly, however, this is a crucial prerequisite for testing the functional hypotheses.

In the present pilot study, the three items which attempted to assess the degree to which the manipulations were successful (i.e., a relative content orientation item, an absolute content orientation item, and an absolute performance orientation item) were included in the experimental questionnaire. Of these, the relative content orientation measure, it was suggested earlier, is clearly the most important, since it simultaneously addresses the motivational concerns of subjects in both types of dilemmas. Means for each of these measures are presented in Table 1A, while the corresponding analyses of variance appear in Table 1B.

TABLE 1

A. MEANS ON MEASURES OF CONTENT OR ACTION ORIENTATION IN PS8 [a]

Orientation Measure	Dilemma			
	Moral		Hedonic	
	Improvisation	Oral Reading	Improvisation	Oral Reading
Relative Content	5.00[b]	2.50	2.83	2.33
Absolute Content	4.00	3.67	2.83	3.17
Absolute Performance	4.50	4.83	5.17	5.50

[a] All means are based on an N of 6 subjects.

[b] The higher the mean, the greater the relative or absolute orientation.

B. ANALYSES OF VARIANCE

Source		Orientation Measure: Relative Content		Absolute Content		Absolute Performance	
	df	MS	F	MS	F	MS	F
Between Subject Pairs							
Dilemma (D)	1	8.216	4.08*	3.375	<1	2.667	2.35
Error (between)	10	2.012		3.475		1.133	
Within Subject Pairs							
Mode of Performance (M)	1	13.500	6.91**	0.042	<1	0.667	< 1
D X M	1	6.000	3.07	1.041	<1	0.000	< 1
Error (within)	10	1.955		2.642		2.133	

* $p < .08$.

** $p < .05$.

It is not surprising that the nature of the action taken (i.e., improvisation versus oral reading) continued to manifest a considerable impact on the relative content orientation measure. The greater content orientation of Improvisation subjects and their lower performance orientation were found rather consistently in the earlier pilot studies. What was encouraging, however, was the fact that this was, for the first time, accompanied by a marginally significant Dilemma main effect as proposed by functional theory. Moreover, the patterning of the means on this item (except possibly the relatively low mean for the Moral Oral Readers) was as anticipated. That is, the Moral Improvisers were significantly more content oriented ($p < .05$ using Duncan's multiple range test) than all of the other conditions, which did not differ from each other.

Data for the two absolute orientation measures, while not conclusive, were also quite encouraging. In both cases, the patterning of means was exactly as predicted by functional theory. In addition, the difference between Moral and Hedonic Dilemma conditions was larger,in each case, than the difference between the alternative performance conditions. These effects, however, were not significant.

The overall consistency among these three measures led to the conclusion that the procedures employed in this pilot study were apparently successful in producing the conditions requisite for a test of the hypotheses. It was felt that, with the larger sample to be employed in the actual study itself, some of the heretofore insignificant effects would probably attain significance. It was, therefore, decided that the procedures of pilot study #8 would be adopted for the experiment proper.

Arousal. Although data from this pilot study related to the arousal hypotheses are clearly secondary and did not affect the decision to adopt the present procedures, they will be noted briefly. [9] First, Moral Dilemma subjects expressed more doubt (a measure of moral dissonance arousal) than Hedonic Dilemma subjects performing the same task. However, this effect was not significant and was, in fact, smaller than the difference between Improvisers and Oral Readers, which was marginally significant ($F = 3.45$, $df = 1, 10$, $p < .09$). The data on guilt arousal (another measure of moral dissonance arousal) yielded an insignificant trend not predicted by functional theory (i.e., greater guilt among

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[9] Means for the variables discussed in the remainder of this chapter appear in Table 7 in Appendix F. Two of the variables mentioned, hedonic dissonance arousal and performance evaluation (a hedonic resolution measure), were derived from a factor analysis reported more fully in Chapter IV.

Oral Readers than among Improvisers). Finally, data on the hedonic arousal measure were generally inconsistent with functional expectations, exhibiting a larger effect among Moral Dilemma than Hedonic Dilemma subjects and, in fact, showing a trend opposite to that predicted for the latter.

Resolution. Although data from this pilot study related to the resolution hypotheses are also secondary to data on the success of the manipulations, they will also be noted briefly. These data, while exhibiting only nonsignificant trends, were by and large consistent with the functional interpretation. Thus posttest opinions (a measure of moral resolution) were higher among Moral Dilemma subjects than among Hedonic Dilemma subjects in the same performance condition, with Moral Improvisers clearly exhibiting the most acceptance of the advocated position. On the measure of scientific value, which some functional theorists (Sheposh & Baron, 1968) have argued should provide opportunities for subjects in both dilemmas to resolve their dissonance, there was a clear (but insignificant) interaction in the predicted direction. Similar, but less pronounced interactions were also observed on the two measures (i.e., personal value and performance evaluation) thought to be functionally relevant only to Hedonic Dilemma subjects. Thus, the patterns of results on these items for Moral Dilemma subjects were unexpected.

Overall, the change in issue combined with the particular set of conditions chosen appeared to have created situations consistent with the specifications of the design. The relatively low level of suspicion, the general consistency of the three manipulation check items, as well as the generally supportive resolution data, especially in consideration of

the small N's involved, provided clear justification for undertaking the final study using the procedures elaborated in the previous chapter. It is to the results of that study that the next chapter turns.

CHAPTER IV

RESULTS AND DISCUSSION: TESTING THE HYPOTHESES

Checks on experimental manipulations

Dilemma. A central feature of the manipulation of the Moral Dilemma was the creation of an orientation toward the content of the action as a result of knowledge that one's speech would successfully influence other people. However, the real issue in a moral dilemma is not content-concern per se, but concern with the "moral implications" of the action. A complete assessment would require simultaneous consideration of content concern and the arousal of motives indicative of moral dissonance. Measures of arousal now available, however, contain an element of ambiguity, since the present level of technical sophistication does not permit the operational separation of initial dissonance arousal and residual arousal following resolution. [1] In light of this ambiguity, the best alternative measure of the success of the manipulation of a moral dilemma is simply the assessment of concern with the content, per se.

In the present study, two items (discussed in the previous two chapters) measured these concerns. The first (the relative content orientation item) asked subjects to indicate the extent to which they

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[1] This rather important limitation on arousal measures will be discussed at length in the concluding chapter of this paper. Suffice it to say that, with the present level of methodological expertise, a truly adequate manipulation check measure (or a truly adequate arousal measure) is probably not attainable.

were concerned with either the content of their speech or their delivery, while the second (the absolute content orientation item) asked them to indicate the extent of their involvement with the ideas they expressed. The means obtained on the first item by subjects in the four experimental conditions are reported in Table 2A. A "repeated measures" analysis of variance performed on these data (treating each content-yoked pair as the unit of analysis) is summarized in Table 2B.

As expected, the highest mean occutred for the Moral Improvisers. Moreover, there was a sizeable (though insignificant) interaction indicating that the difference between Improvisers and Oral Readers was, as expected, greater for the Moral Dilemma subjects. Nevertheless, these data are not very strong for two reasons: (1) the anticipated Dilemma main effect did not occur; and (2) the mean, even for the most content oriented group (3.38 for the Moral Improvisers), fell on the delivery-oriented side of the midpoint. The highly significant Mode of Performance main effect was, again, not surprising, since it occurred in most of the preliminary investigations.

TABLE 2

A. MEAN RELATIVE CONTENT ORIENTATION SCORES [a]

Dilemma	Mode of Performance	
	Improvisation	Oral Reading
Moral	3.38 [b]	1.83
Hedonic	3.21	2.69

[a] All means are based on an N of 29 subjects.

[b] The higher the mean, the greater the content orientation (or the less the performance orientation).

B. ANALYSIS OF VARIANCE

Source	df	MS	F
Between Subject Pairs			
Dilemma (D)	1	3.448	1.67
Error (between)	56	2.067	
Within Subject Pairs			
Mode of Performance	1	31.034	11.13*
D X M	1	7.759	2.78
Error (within)	56	2.789	

* $p < .005$.

Data for the second item, absolute content orientation, provided no additional evidence for the functional expectations. The means obtained by subjects in the four experimental conditions ranged from 3.24 (for the Moral Improvisers) to 3.69 (for the Hedonic Improvisers). A repeated measures analysis of variance on these data yielded no significant effects.

Even were these data stronger, there would still be difficulty in interpreting them as indicative of successful manipulation of this dilemma since, for example, some content oriented subjects might be concerned with the "moral implications" of the content, while others, equally as content oriented, might be concerned with the "logical structure" of the content. While asking more focussed questions would appear to be a solution to this problem, it would probably be no more fruitful than the present compromise since, at the present stage of

methodological sophistication, concern with the moral implications of a particular behavior is exactly what a functional theorist means by moral arousal. That is, to the extent that an individual becomes convinced that his behavior has moral implications (i.e., implies some difficulty with his coping mechanisms-in this case with his value system) he is said to be morally aroused and all the problems attendant upon the measurement of arousal become germane to the assessment of the success of the manipulations.

The failure of the present data to provide strong evidence for the success of the manipulations cannot be taken as conclusively demonstrating the failure of the present manipulations in this regard, since subjects in the different dilemma conditions might have responded similarly (i.e., been equally as content oriented) for somewhat different reasons. Overall, it can only be said that the present data provided no clear evidence of the successful creation of a moral dilemma. At the same time, however, they do not warrant the conclusion that these manipulations were unsuccessful.

Central to the manipulation of the Hedonic Dilemma was the creation of an orientation toward the action itself as a result of knowing that one's speech would not be used except as practice for an eventual test of oral verbal ability. In checking on the manipulation of a hedonic dilemma, there is a problem, analogous to that found previously for the moral dilemma, raised by the fact that concern with the action per se does not represent the full dynamics of a hedonic dilemma. Subjects experiencing hedonic dilemmas should be concerned with a particular aspect of their action, its worthlessness. As was the case with the moral dilemma, full assessment of the dynamics requires measures of

initial hedonic dissonance arousal which are not possible within the scope of present methodological sophistication. In light of these difficulties, it was again felt that a measure of concern with the basis of the motivational dilemma (in this case, concern with the action per se) was the best compromise measure for assessing the success of the manipulations.

Evidence relating to the relative content orientation (already presented in Table 2) suggests that most subjects , in all conditions, were action oriented, with Oral Readers indicating significantly more delivery orientation than Improvisers. In addition, there was a second question (the absolute performance orientation item discussed in Chapters II and III) which asked subjects to indicate the extent of their involvement in producing a good oral performance. The means obtained on this measure by subjects in the four experimental conditions are presented in Table 3A, while the corresponding repeated measures analysis of variance appears in Table 3B. These data also indicate greater delivery orientation of Oral Readers, while confirming (by the absolute values of the means) the fact that subjects in all conditions were at least moderately action oriented.

Further indication that even responses to the relative orientation question (Table 2) represent primarily the delivery orientation of subjects in all conditions comes from a consideration of the correlations among subjects' responses to all these items (relative content orientation, absolute content orientation, and absolute performance orientation). Only the correlation between the relative content orientation question (in Table 2) and the absolute performance orientation question (in Table 3) was significant ($r = -.41$, $t = 51.25$, $p < .001$).

TABLE 3

A. MEAN ABSOLUTE PERFORMANCE ORIENTATION SCORES [a]

Dilemma	Mode of Performance	
	Improvisation	Oral Reading
Moral	4.59 [b]	5.55
Hedonic	4.62	5.69

B. ANALYSIS OF VARIANCE

Source	df	MS	F
Between Subject Pairs			
Dilemma (D)	1	0.216	< 1
Error (between)	56	1.425	
Within Subject Pairs			
Mode of Performance (M)	1	30.009	18.38*
D X M	1	0.078	< 1
Error (within)	56	1.632	

[a] All means are based on an N of 29 subjects.

[b] The higher the mean, the greater the performance orientation.

* $p < .001$.

The difficulties of interpreting data on the manipulation of a hedonic dilemma are analogous to those already discussed for moral dilemmas. For example, there might be some action oriented subjects who are concerned with the insignificance and worthlessness of their act. But, there might equally well be others who are concerned with the positive qualities of their deliveries. Once again, therefore, the findings, which indicate that subjects in all conditions were concerned with their actions per se, may only be taken as suggestive of a possible failure of the instructions to produce a hedonic dilemma only for Hedonic Dilemma subjects. It is always possible that the same level of concern may have different loci in the two conditions.

It is rather puzzling that the present manipulation checks provide so little evidence that the two dilemmas were successfully created in view of the fairly clear positive results of pilot study #8, since the procedure of the two studies were virtually identical. [2] This lack of positive findings, however, does not constitute evidence that the manipulations, in fact, failed, particularly in view of the limitations of this measure already discussed. It is, therefore, still worthwhile to proceed with an examination of the data designed to test the hypothesized arousal and resolution effects. Nevertheless, this lack of positive evidence creates at least a strong possibility that conditions appropriate to testing the hypotheses did not actually exist. Therefore, after examining these data for the original sample, these same measures will be evaluated for a selected sample, consisting of those subjects whose scores on the relative content orientation measure gave a clear

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[2] This anomaly will be addressed further in the final chapter of this paper.

indication of the relevant motivational concern (i.e., concern with the content for Moral Dilemma subjects and with the performance for Hedonic Dilemma subjects).

Mode of performance. Although it is relatively difficult to assess the degree to which Oral Reading subjects varied in fulfilling the requirements of their experimental condition, certain criteria can be used to gauge the speeches produced by Improvisation subjects. As reported in Chapter II, four basic measures of the speech content were derived from a content analysis of the speeches (total word count, number of outline arguments, number of nonoutline arguments, and number of resistant arguments). The Spearman-Brown estimated interjudge reliabilities (based on a random sample of eight speeches) of the three ratings made by judges (i.e., excluding the total word count) indicated extremely high reliabilities [3] (.89,.98, and .99 for number of outline arguments, number of nonoutline arguments, and number of resistant arguments, respectively). Overall,Improvisation subjects used an average of 485.9 words, 14.5 outline arguments, 15.8 nonoutline arguments, and 1.8 resistant arguments in their speeches. In addition, there were no statistically significant differences (using t-tests) between Improvisers in the two dilemma conditions on any of these four measures.

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[3] The uncorrected reliabilities were .78, .97, and .98 for these same measures. These extremely high scores do not represent complete agreement in the coding of individual arguments or even in the definition of particular arguments. Casual observation indicated considerable variability in the allocation of specific phrases to individual categories within a given class of categories (e.g., within the general category of outline arguments) and even in the exact specification of the limits of a particular phrase. What these high reliabilities suggest is that both raters were using similar enough criteria in performing both tasks, so that individual disagreements tended to cancel out when the particular judgments were summed.

Despite this general success in inducing subjects in the Improvisation conditions to perform those behaviors indicative of successful improvisation, some subjects might be considered unsuccessful Improvisers. Thus, eight subjects (five Moral, three Hedonic) made speeches of fewer than 250 words, while several subjects (two Moral, four Hedonic) produced five or more resistant arguments (indicating nonacceptance of their tasks). Most of the analyses to be reported in this paper included even the unsuccessful Improvisers. Similar analyses, however, were performed omitting these 14 subjects and will be reported whenever they alter an interpretation based on the complete data set.

Choice and nonvolunteering. One question from the actual experimental "Questionnaire" asked subjects "How free did you feel to leave when you were offered that possibility?" Subjects responded on 7-point scales labelled at the ends and in the middle as follows: (1) "Not at all free," (4) "Moderately free," and (7) "Extremely free." The means for the four groups ranged from 4.24 to 4.83 and did not differ significantly from each other (i.e., no significant effects were found in a repeated measures analysis of variance on these data). Thus, subjects in all groups felt at least moderately free, a condition which should suffice for the arousal of dissonance.

Differences in the effectiveness of the choice manipulation might also have affected the actual rate of volunteering in the various experimental conditions. Of the five subjects who did not volunteer (i.e., nonvolunteers), two were Moral Improvisers, two were Hedonic Improvisers and the fifth was a Hedonic Oral Reader. [4] A chi

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[4] Of these five, two indicated that they declined because they had no opinions on the topic and felt they were poor public speakers. Another declined because he had a point of view opposed to the topic

square analysis of volunteering and nonvolunteering as a function of experimental conditions failed to reach significance ($X^2 = 2.07$, $df = 3$, $p < .75$).

Motive arousal

Moral dissonance. Although there was no positive evidence indicating that the conditions which were meant to establish a content orientation among Moral Dilemma subjects were successful, it is still possible, since dissonance arousal can itself be, and in fact often is, considered a manipulation check in this type of research, that those given moral dilemma instructions experienced the arousal of moral dissonance as proposed in hypothesis 1. According to this hypothesis, Moral Dilemma subjects were expected to experience greater moral dissonance in the Improvisation than the Oral Reading condition, while Hedonic Dilemma subjects in both performance conditions were expected to experience less moral dissonance overall and not to differ from each other in this regard.

Operationally it was expected that at least one of the two measures of moral dissonance arousal, one concerning guilt and the other concerning doubt, when subjected to an analysis of variance,

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and felt he was a poor speaker. The fourth declined solely for ideological reasons, while the fifth declined because he had a sore throat. Thus, at most, two subjects refused for issue related reasons and, since one of these was in each of the improvisation conditions, there is little need for concern over a self-selection bias in this study.

It should be noted also that three other subjects were dropped from the analyses reported. One of these misunderstood the instructions and gave a pro-attitudinal talk. Another was accidentally given a speech to read which did not match the notes he had previously studied. The third was eliminated to equalize the N in all experimental conditions as well as because he appeared not to take the task seriously (i.e., he gave a very short and inane speech). All subjects who were eliminated (except the one just mentioned), as well as those who declined to participate, were replaced with additional subject pool participants.

would yield both a Dilemma main effect (i.e., greater arousal for Moral Dilemma subjects) and a Dilemma X Mode of Performance interaction (i.e., this effect should be stronger for Improvisers). [5] Means for each of the four experimental groups in response to the item "Making this speech made me feel guilty," which was accompanied by a 7-point agree-disagree response scale, are reported in Table 4A. Similar means for the question "To what extent did your speech raise doubts in your mind about the validity of your own position?" are also presented in this table. The latter question was accompanied by a 7-point scale from (1) "Not at all" through (4) "Moderately" to (7) "Extremely."

TABLE 4

A. MEAN MORAL DISSONANCE AROUSAL SCORES [a]

Moral Arousal Measure	Dilemma			
	Moral		Hedonic	
	Improvisation	Oral Reading	Improvisation	Oral Reading
Guilt	2.72 [b]	2.76	2.69	2.59
Doubt	2.90	2.28	2.97	2.38

a All means are based on an N of 29 subjects.

b The higher the mean, the greater the guilt or doubt.

5 This expectation is stated in this ambiguous fashion on purpose, since (1) some differences among proponents of a functional approach exist as to which motive, guilt or doubt, is actually expected to be aroused by a dilemma of the type created here (Baron, 1968; Kelman & Baron, 1968a) and (2) these effects, on either of these two dimensions, would constitute sufficient evidence of moral arousal, since explicit predictions cannot be derived from functional theory.

B. ANALYSES OF VARIANCE

Source	df	Measure: Guilt MS	Guilt F	Doubt MS	Doubt F
Between Subject Pairs					
Dilemma (D)	1	0.310	< 1	0.216	< 1
Error (between)	56	3.224		2.917	
Within Subject Pairs					
Mode of Performance (M)	1	0.034	< 1	10.560	6.10*
D X M	1	0.138	< 1	0.009	< 1
Error (within)	56	4.211		1.731	

* $p < .025$.

Neither measure exhibited either of the predicted main or interaction effects. There was, however, a significant Mode of Performance main effect for the measure of doubt which is consistent with the data on differential content orientation reported previously (i.e., Improvisers, who were more content oriented as a group, also expressed more doubts). Thus, weak moral dissonance arousal appeared to have occurred among subjects whose task was to improvise. [6]

Hedonic dissonance. The successful creation of a hedonic dilemma should , according to hypothesis 2, be accompanied by greater hedonic dissonance in the Oral Reading than in the Improvisation condition. Moral

[6] One possibility not really considered by hypothesis 1 as stated, that arousal occurred but was effectively reduced by subsequent reactions, will be considered in the next chapter.

Dilemma subjects should exhibit less such hedonic dissonance and should not differ on this dimension as a function of the mode of their performance.

Operationally it was expected that a measure of hedonic dissonance arousal would, when subjected to an analysis of variance, yield both a Dilemma main effect (i.e., greater arousal for Hedonic Dilemma subjects) and a Dilemma X Mode of Performance interaction (i.e., this effect should be stronger for Oral Readers). According to Lubalin, Kelman and Dabbs (1968) it should be possible to separate operationally those aspects of task evaluation which pertain to hedonic dissonance arousal and those more relevant to hedonic dissonance reduction. In an attempt to do this, a number of items relating to various aspects of the task were included in the "Questionnaire." All questionnaire items (except the measure of subjects' attitudes toward the issue) were subjected to a factor analysis.[7]

The first factor extracted (accounting for 22.3 percent of the variance) was considered to represent essentially a measure of hedonic dissonance arousal for two reasons. First, it accounted for the largest amount of variance of any task relevant dimension - which would be expected of a gross arousal process as compared to more subtle processes of resolution (Lubalin, Kelman & Dabbs, 1968; Willis & Willis, in press). Second, the two items loading positively on it were considered, on a priori grounds, to represent the measures addressing most directly the nature of the hedonic dilemma aroused in the present study.[8] The six agree-disagree items having loadings of .50 or

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[7] Factors were extracted by means of a principal axis analysis and a varimax factor rotation. Only factors which accounted for at least ten percent of the variance in the correlation matrix were considered. Three such factors were located and will be reported as they become germane.

[8] For the moment, it is being assumed that this measure assesses initial hedonic dissonance arousal. There is no necessity to this

higher on this factor are presented in Table 5 along with their respective loadings on this factor.

TABLE 5

ITEMS LOADING ON FACTOR (I): HEDONIC AROUSAL

Item	Loading
1. Making this speech was boring.	.80
2. The experiment was interesting.	-.68
3. Making this speech was challenging and rewarding.	-.76
4. Making this speech was a waste of time.	.74
5. My participation was personally valuable.	-.57
6. The speechmaking task was enjoyable.	-.53

Factor scores were calculated for each subject on this new dimension and a repeated measures analysis of variance was performed on this new dependent measure. Means for the four experimental conditions on these normalized factor scores (i.e., mean = 4, sigma = 3 to approximate the original scale) varied from 3.51 to 4.33, but the analysis of variance revealed no significant effects. [9] Moreover, an examination of means for the six individual items suggests that the overall experience was at least neutral, if not slightly pleasant, for most subjects. Thus, despite a general concern with delivery, hedonic dissonance arousal

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assumption, however. In fact, in the next chapter the implications of considering it a measure of residual hedonic dissonance will be explored.

[9] Analogous results were obtained when analyses of variance were performed independently on scores for each of the six items.

appeared to be fairly low and did not differ across conditions.

General discomfort. According to hypothesis 3, any measure of dissonance arousal which does not differentiate moral and hedonic aspects of dissonance should exhibit a statistical interaction when subjected to an analysis of variance. For example, in the present study subjects in both high dissonance conditions (Moral Improvisation and Hedonic Oral Reading) should exhibit greater discomfort than do subjects in the low dissonance conditions of the same dilemma. Data from a single item, which appeared only in the actual study (i.e., it was not given to the pilot study subjects included in previous analyses), are relevant to a test of this hypothesis. Subjects were required to indicate the extent of their agreement or disagreement with the statement "Making this speech made me feel uncomfortable." The means for the four experimental groups on this item appear in Table 6A, while the corresponding repeated measures analysis of variance is presented in Table 6B.

TABLE 6

A. MEAN DISCOMFORT OF SPEECHMAKING SCORES [a]

Dilemma	Mode of Performance	
	Improvisation	Oral Reading
Moral	4.87 [b]	3.70
Hedonic	4.48	3.57

[a] All means are based on an N of 23 subjects (i.e., excluding pilot study subjects).

[b] The higher the mean, the greater the discomfort.

B. ANALYSIS OF VARIANCE

Source	df	MS	F
Between Subject Pairs			
Dilemma (D)	1	1.565	< 1
Error (between)	44	3.575	
Within Subject Pairs			
Mode of Performance (M)	1	25.043	10.64*
M X D	1	0.391	< 1
Error (within)	44	2.354	

* $p < .01$.

In light of the previous analyses of data on dilemma-specific motive arousal, it is not surprising that this hypothesis was not confirmed by the data. The significant Mode of Performance main effect, however, is consistent with several other effects reported earlier (i.e., greater doubt, less relative performance orientation, and less absolute performance orientation among Improvisers). In combination these data suggest that Improvisers reported a relatively weak amount of moral dissonance (perhaps coupled with weak hedonic dissonance), while Oral Readers reported only weak hedonic dissonance.

Motive reduction

It might be questioned at this point whether, in light of the weak evidence of arousal which was, in any case, inconsistent with expected relations, there is any justification for testing hypothesized resolution effects. As is the case with cognitive dissonance theory, the underlying

arousal-resolution logic encourages an affirmative answer. This is so because it is possible that the successful resolution of a motive initially aroused (e.g., moral or hedonic dissonance) should reduce the measurable traces of such arousal to the point that initial differences would no longer be apparent by the time arousal is usually measured (i.e., at the end of the experiment). Conditions that produced differences at first would, under these circumstances, appear not to differ on an arousal measure. Thus, evidence of proposed resolution effects can be taken as support for dissonance hypotheses despite weak or inconclusive arousal effects.

Moral dissonance. According to hypothesis 4, subjects in the Moral Improvisation condition should change their attitude toward the issue in the direction advocated in their speeches more than Moral Oral Readers and both should exhibit more such change than Hedonic Dilemma subjects in either performance condition.

Operationally this means that an analysis of variance on post-experimental attitude scores should reveal a Dilemma main effect as well as a Dilemma X Mode of Performance interaction. Mean posttest opinions for the four experimental groups are reported in Table 7A, while the corresponding repeated measures analysis of variance appears in Table 7B.

The Dilemma main effect appeared in the predicted direction, but was only marginally significant ($p < .09$). There was no interaction, nor was there a Mode of Performance main effect. When these data were subjected to an internal analysis (following Zimbardo, 1965) in which subjects who either failed to produce adequate speeches (< 250 words) or exhibited too much resistance (> 5 resistant arguments) were eliminated,

the significance levels of these effects remained unchanged. [10]

TABLE 7

A. MEAN POSTTEST OPINION SCORES [a]

Dilemma	Mode of Performance	
	Improvisation	Oral Reading
Moral	2.66 [b]	2.48
Hedonic	2.24	1.90

B. ANALYSIS OF VARIANCE

Source	df	MS	F
Between Subject Pairs			
Dilemma (D)	1	7.250	3.11*
Error (between)	56	2.329	
Within Subject Pairs			
Mode of Performance (M)	1	1.940	1.14
M X D	1	0.216	< 1
Error (within)	56	1.703	

[a] All means are based on an N of 29 subjects.

[b] The higher the mean, the greater the acceptance of the advocated position.

* $p < .09$.

[10] Zimbardo (1965) found essentially the same results with respect to his attitudinal measure. This technique only increased the significance level for a measure of effort in his study, but even then the increase was only to the .10 level.

It was noted in Chapter II that for the posttest opinion item this study was expanded to a 3 X 2 factorial design (with an additional baseline control group). The mean agreement score on this item for the Moral Content-yoked control group was 2.26, while that for the Hedonic Content-yoked controls was 2.57. The No Communication Control group had a mean of 2.48. When a 3 X 2 repeated measures analysis of variance was performed on these data (i.e., for the 23 matched subjects in each cell) no significant effects were found. Thus, even the weak evidence supporting a functional interpretation of moral dissonance resolution disappeared when appropriate controls were instituted.

The functional approach has previously concerned itself with the role of effort as a mediator of moral and hedonic dissonance arousal (Kelman & Baron, 1968a; Lubalin, Kelman & Dabbs, 1968; Sheposh & Baron, 1968). According to this interpretation, effort accompanying a moral dilemma should serve to reduce the arousal of moral dissonance, as a wrongdoing accompanied by suffering should be less guilt-provoking than one accomplished without effort or pain.

The second factor extracted in the factor analysis reported earlier (accounting for 11.1 percent of the variance) was essentially a measure of effort. The three items with loadings on this factor of .50 or above were all agree-disagree items dealing with affective, behavioral and cognitive effort. Table 8A presents the mean effort factor scores for each of the experimental groups, while Table 8B presents the corresponding analysis of variance.

TABLE 8

A. MEAN EFFORT FACTOR (II) SCORES [a]

Dilemma	Mode of Performance	
	Improvisation	Oral Reading
Moral	4.44 [b]	3.95
Hedonic	4.58	3.03

B. ANALYSIS OF VARIANCE

Source	df	MS	F
Between Subject Pairs			
Dilemma (D)	1	0.490	< 1
Error (between)	56	1.147	
Within Subject Pairs			
Mode of Performance (M)	1	3.378	4.11*
D X M	1	0.910	< 1
Error (within)	56	0.822	

[a] All means are based on an N of 29 subjects.

[b] The higher the mean, the greater the effort.

* $p < .05$.

The Mode of Performance main effect, indicating greater perceived effort among Improvisers than Oral Readers, suggests one explanation for the absence of the predicted interaction on the issue-attitude measure (Table 7). That is, greater effort may have reduced the moral dissonance arousal of Moral Improvisers in relation to their Oral Reading counterparts. In order to control for this differential effort interpretation an analysis of covariance was performed on the posttest opinion scores using effort as the covariate. The adjusted means appear in Table 9A, while the analysis of covariance is presented in Table 9B.

TABLE 9

A. MEAN POSTTEST OPINION SCORES ADJUSTED FOR EFFORT

Dilemma	Mode of Performance	
	Improvisation	Oral Reading
Moral	2.67	2.48
Hedonic	2.26	1.86

B. ANALYSIS OF COVARIANCE

Source	df	MS	F
Dilemma (D)	1	7.606	3.76*
Mode of Perforamnce (M)	1	2.424	1.20
D X M	1	.313	< 1
Error	111	2.024	

* $p < .06$.

Controlling effort in this fashion did not affect the predicted interaction; it remained clearly insignificant. It did, however, indirectly lend some support to the notion that effort tended to reduce moral dissonance arousal in the present study, since the Dilemma main effect reached the .06 level in this analysis (in contrast to the .09 level reported for the analysis without the effort covariate).

Hedonic dissonance. According to hypothesis 5, Hedonic Dilemma subjects in the Oral Reading condition should change their attitude toward the task (in the direction of enhancement) more than Improvisers, and both should exhibit more such change than Moral Dilemma subjects in either performance condition.

Operationally this means that an analysis of variance on at least one of the measures of task or role perceptions was expected to exhibit both a Dilemma main effect (i.e., greater enhancement for Hedonic Dilemma subjects) and a Dilemma X Mode of Performance interaction (i.e., this effect should be stronger for Oral Readers). [11]

As reported earlier, a variety of items were subjected to a factor analysis. The third factor extracted, the Performance Evaluation, represents one dimension along which the above effects might manifest themselves. The three agree-disagree items having loadings of .50 or higher on this factor are presented in Table 10 along with their respective loadings.

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[11] Functional theory, while improving on cognitive dissonance theory in its ability to specify modes of resolution functionally relevant to a particular dilemma, is still too crude to make specific predictions about alternative responses within general response classes (Kelman & Baron, 1968b). Therefore, since a particular response is not derivable from the theory as now postulated, the predicted effects on any of the functionally relevant dimensions constitute positive evidence for the theory. Thus, failure to find the predicted relations on any given measure is less damaging to the theory than finding positive results on at least one measure is supportive of the theory.

TABLE 10

ITEMS LOADING ON FACTOR (III): PERFORMANCE EVALUATION

Item	Loading
1. My delivery was effective.	.85
2. My delivery was convincing.	.90
3. I was satisfied with my performance as a public speaker.	.85

An analysis of variance performed on factor scores derived from this factor exhibited no significant effects. An examination of means for the individual items comprising this factor suggests that subjects were generally not satisfied with their performance (i.e., all means fell in the slight to moderate disagreement portion of the response scale). There is, thus, no evidence for hypothesis 5 on this dimension.

Two a priori dimensions on which the effects of hedonic dissonance resolution might manifest themselves were represented by two agree-disagree items: (1) "My participation was personally valuable" and (2) "My participation was scientifically valuable." Analyses of variance on both items yielded no significant effects, with cell means indicating neutrality to slight agreement with both statements. However, an analysis of variance performed on the latter item, using the sample from which nonimprovisers and resisters had been eliminated, yielded significant results. Means for the four experimental conditions on this item appear in Table 11A, while the corresponding repeated measures analysis of variance is presented in Table 11 B.

The significant Dilemma X Mode of Performance interaction is in the predicted direction for Hedonic Dilemma subjects. There is, however,

TABLE 11

A. MEAN SCIENTIFIC VALUE SCORES WITH NONIMPROVISERS AND RESISTERS OMITTED [a]

Dilemma	Mode of Performance	
	Improvisation	Oral Reading
Moral	4.41 [b]	4.09
Hedonic	4.00	4.46

B. ANALYSIS OF VARIANCE

Source	df	MS	F
Between Subject Pairs			
Dilemma (D)	1	0.011	< 1
Error (between)	42	1.011	
Within Subject Pairs			
Mode of Performance (M)	1	0.102	< 1
D X M	1	3.284	4.30*
Error (within)	42	0.765	

[a] All means are based on the reduced N of 22 subjects.

[b] The higher the mean, the greater the reported scientific value.

* $p < .05$.

some problem in explaining the reverse effect among Moral Dilemma subjects. It seems reasonable to assume that the judgments made by the latter represent veridical assessments of the probable utility of their performance. For Hedonic Dilemma subjects a similar pattern of veridical judgment effects should prevail, but instead there is evidence that Oral Readers were the ones who enhanced this aspect of their performance. Sheposh and Baron (1968) have suggested that the scientific value dimension might be an appropriate dimension for Moral Dilemma subjects to use in resolving their discomfort. If this interpretation were correct, an interaction on this dimension (i.e., a greater tendency to enhance the scientific value in the high dissonance conditions) would be expected. The present interaction, therefore, provides some confirmation of the functional interpretation, since the data for Hedonic Dilemma subjects are consistent with the theory and those for Moral Dilemma subjects may be reinterpreted in these terms.

According to the functional approach, effort accompanying a hedonic dilemma should serve to increase the arousal of hedonic dissonance, as a worthless act accompanied by hardship should be more hedonically stressful than one accomplished without effort or pain.

Data presented in Table 8, which indicated greater perceived effort among Improvisers than among Oral Readers, suggest one reason why the predicted interactions did not occur in initial analyses of the three measures of hedonic resolution. That is, the greater effort may have increased the hedonic dissonance arousal of Hedonic Improvisers in relation to their Oral Reading counterparts.

In order to control for this differential effort interpretation, analyses of covariance were performed on each of the hedonic

resolution measures using effort as the covariate. Controlling effort in this way did not change the significance of any of the main or interaction effects on these variables; all remained insignificant. Thus, the differences in effort do not appear to account for the failure to find predicted hedonic resolution effects.

Subsample oriented toward manipulated dilemma

In earlier sections of this chapter it was noted that evidence of successful arousal of concern with the content of their action among Moral Dilemma subjects was not obtained for either the Moral Improvisation or Moral Oral Reading group as a whole. It is still possible, however, that particular Moral Dilemma subjects might have been content-oriented. In the same way, although most Hedonic Dilemma subjects were performance oriented it is still possible that some particular subjects were more so than others. To the extent that the measure of relative content orientation (Table 2) represents an adequate check on the manipulation of the two functional dilemmas, it becomes possible to extract subsamples from each condition based on obtained scores on this dimension in which subjects do, indeed, exhibit concern with the appropriate dilemma-relevant motivational base. [12] To the extent that the underlying hypotheses hold true, they ought to be confirmed for these subsamples even though they were not confirmed for the original (unselected) sample as a whole. Such subsamples of subjects oriented toward the manipulated dilemma might be constituted using several different criteria.

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[12] As noted earlier, the assumption that this measure actually constitutes a manipulation check is, at best, tenuous, since this item fails to capture some of the important dynamic elements of the functional dilemmas. Nevertheless, the present section will proceed as if this assumption were true. The entire issue will be more fully addressed in the concluding chapter of this paper.

Criteria for selection. Subjects in each Moral Dilemma condition could be chosen independently using the same criterion, thereby eliminating the content-yoked character of the design. In a similar fashion, Hedonic Dilemma subjects could be selected independently using the same criterion in both conditions. There is some ambiguity about using this procedure, however, since it is in the nature of the design that subjects in the low dissonance conditions within each dilemma (i.e., the Moral Oral Reading and Hedonic Improvisation conditions) are expected to exhibit less concern with the relative motivational basis of their dilemma than the corresponding high dissonance condition subjects. They would, therefore, be expected to exhibit less of the dilemma-appropriate orientation than the Moral Improvisation or Hedonic Oral Reading subjects. Accordingly, this method of selection should result in fewer subjects from the low dissonance conditions meeting the criterion for inclusion. This was true in the present study in that (1) 14 Moral Improvisers had relative content orientation scores of four or more, while only three Moral Oral Readers met this criterion and (2) 16 Hedonic Oral Readers had relative content orientation scores less than three, while only ten Hedonic Improvisers met this criterion. Subjects meeting the criteria would, in general, be those who were highly aroused. Little difference might be expected, then, on other dependent measures for the two groups of subjects, within the same dilemma, selected in this fashion.

An alternative selection procedure, which maintains the content-yoked design, would involve selecting subjects from only the high dissonance conditions on the basis of the relative content orientation measure. Since, however, the assignment of yoked partners

was done at random, this technique is equivalent to selecting the high dissonance conditions by means of a decision rule and taking a random sample of equivalent size from the low dissonance conditions.

A third technique can be used which partially overcomes the deficiencies of the other two selection procedures. This would involve the use of different criteria in each condition so as to select the most extremely content oriented subjects within each of the Moral Dilemma conditions and the most extremely performance oriented subjects within each of the Hedonic Dilemma conditions. This explicitly takes account of the problem with the first technique by admitting that the most extreme subjects in the low dissonance conditions might be less concerned with the motivational basis of their dilemma than the most extreme subjects in the high dissonance conditions. Moreover, it eliminates the problem of subjects in some conditions being selected in a systematic way while those in other conditions are selected essentially at random, by selecting subjects in every condition on the same systematic criterion (i.e., the subjects within that condition most extremely concerned with the relevant motivation). There is, however, a drawback to this procedure in that subjects in different conditions may be extreme in their concern for different reasons.

Despite this possible weakness, it was decided that the third technique, as the best one available, would be used to select the <u>ten</u> most extreme subjects in each condition (i.e., the Moral Dilemma subjects having the highest relative content orientation scores and the Hedonic Dilemma subjects having the lowest relative content

orientation scores). [13] The major analyses, reported previously in this chapter, were repeated using data from these new subsamples.

Manipulation checks. The selection procedure adopted was successful in producing conditions which were clearly differentiated on two of the three items measuring concern with the motivational bases of the dilemmas. The means obtained by the selected subsamples on the relative content orientation measure and the absolute performance orientation measure are reported in Table 12A, while the corresponding analyses of variance are presented in Table 12B. Since the means for these groups on the absolute content orientation measure ranged from 2.10 to 3.10 and did not differ significantly from each other, they are not presented in these tables.

On both measures the Dilemma main effects were significant and in the proper direction, but there were also significant Mode of Performance main effects and, in one case, a significant interaction effect. For

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[13] The number ten was somewhat arbitrarily selected for the following reasons: (1) Ten subjects constituted about the smallest sample size at which there were still enough subjects for analytic purposes; (2) Any larger sample would have entailed considerable overlap between the criterion for selection in the Oral Reading conditions in the two dilemmas. As it was, four of the most extremely content oriented subjects in the Moral Oral Reading condition had relative content orientation scores of the same magnitude (i.e., two) as two of the most extremely performance oriented subjects in the Hedonic Oral Reading condition.

The following criteria were used in obtaining the subjects in each condition: (1) The Moral Improvisation subsample contained all subjects whose relative content orientation scores exceeded four; (2) The Moral Oral Reading subsample contained all six subjects whose relative content orientation scores exceeded two plus a random sample of four of the subjects whose scores were exactly two; (3) The Hedonic Improvisation subsample contained all subjects whose relative orientation scores did not exceed two; and (4) The Hedonic Oral Reading subsample contained all eight subjects whose relative content orientation scores were exactly one plus a random sample of two of the subjects whose scores were exactly two.

TABLE 12

A. MEAN ORIENTATION SCORES FOR SELECTED SUBSAMPLES [a]

Orientation Measure	Dilemma: Moral		Dilemma: Hedonic	
	Improvisation	Oral Reading	Improvisation	Oral Reading
Relative Content Orientation	5.60 [b]	2.90	1.60	1.20
Absolute Performance Orientation	3.70	5.20	4.90	5.80

B. ANALYSES OF VARIANCE

Source	df	Orientation Measure: Relative Content Orientation MS	F	Absolute Performance Orientation MS	F
Dilemma (D)	1	81.225	169.03***	8.100	5.59*
Mode of Performance (M)	1	24.025	49.99***	14.400	9.93**
D X M	1	13.225	27.52***	0.900	< 1
Error	36	0.481		1.450	

[a] All means are based on an N of 10 subjects.

[b] The higher the mean, the greater the respective orientation.

* $p < .025$. ** $p < .005$. *** $p < .001$.

each measure, the main reason for the obtained effects was the significant deviation of the Moral Improvisation condition from all of the others. [14] In the case of the measure actually used in the selection procedure (i.e., the relative content orientation item), the mean for the Moral Oral Readers was also significantly higher than the means for either of the Hedonic Dilemma conditions. With the possible exception that scores for the Moral Oral Readers were somewhat more like those of Hedonic Dilemma subjects on the absolute performance orientation measure than expected, these data are consistent with the expectation that this selection would produce Moral and Hedonic Dilemma conditions distinguishable on the manipulation check measures. The Mode of Performance main effects, however, suggest that, even in these selected groups, the Improvisation versus Oral Reading manipulation was still quite powerful.

Motive arousal hypotheses. The three measures previously employed to test hypotheses relating to the arousal of moral and hedonic dissonance --guilt, doubt, and hedonic arousal-- were also evaluated for the selected subsamples. The means obtained on all three measures are reported in Table 13A, while the corresponding analyses of variance are presented in Table 13B.

Neither measure of moral dissonance arousal (i.e., guilt or doubt) exhibited the pattern of means predicted by hypothesis 1. In fact, there was an interaction on the guilt measure primarily accounted for by a significant difference between Moral Improvisers and Moral Oral Readers in exactly the opposite direction to that predicted by

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[14] Simple effects were assessed using Duncan's new multiple range statistic. All such effects reported as significant are at least at the .05 level unless otherwise indicated.

TABLE 13

A. MEAN MOTIVE AROUSAL SCORES FOR SELECTED SUBSAMPLES [a]

Measure of Motive Arousal	Dilemma			
	Moral		Hedonic	
	Improvisation	Oral Reading	Improvisation	Oral Reading
Guilt	1.60	3.30	2.60	1.90
Doubt	2.90	2.20	2.80	1.70
Hedonic Arousal	3.74	2.84	4.18	3.34

B. ANALYSES OF VARIANCE

Source		Measure of Motive Arousal					
		Guilt		Doubt		Hedonic Arousal	
	df	MS	F	MS	F	MS	F
Dilemma (D)	1	.400	<1	.900	< 1	2.247	2.87*
Mode of Performance (M)	1	2.500	<1	8.100	3.64*	7.656	9.78***
D X M	1	14.400	5.53**	.400	< 1	.007	< 1
Error	36	2.610		2.230		.783	

[a] All means are based on an N of 10 subjects.

[b] The higher the mean, the greater the relevant arousal.

* $p < .10$. ** $p < .025$. *** $p < .005$.

functional theory. Furthermore, the doubt item exhibited a marginally significant Mode of Performance main effect ($p < .07$), but none of the simple effects comparisons between Improvisation and Oral Reading conditions was significant.

Data on the arousal of hedonic dissonance were generally inconsistent with hypothesis 2. Thus, although the marginally significant Dilemma main effect was in the right direction (i.e., there was greater hedonic dissonance arousal in the Hedonic Dilemma conditions), the difference between Improvisers and Oral Readers was even stronger and, for Hedonic Dilemma subjects, at least, in a direction opposite to that anticipated by functional theory. Thus, despite fairly clear evidence that subjects in the two dilemmas experienced some of the dilemma-relevant concerns, there is no evidence that this affected the arousal of dilemma-relevant motives in the expected ways.

Motive reduction hypotheses. The posttest opinion item, employed previously to evaluate hypothesis 4, was reexamined for each of the selected subsamples. The means on this measure are reported in Table 14A, while the corresponding analysis of variance may be found in Table 14B.

TABLE 14

A. MEAN POSTTEST OPINION SCORES FOR SELECTED SUBSAMPLES [a]

Dilemma	Mode of Performance	
	Improvisation	Oral Reading
Moral	3.40 [b]	2.50
Hedonic	2.90	1.80

[a] All means are based on an N of 10 subjects.

[b] The higher the mean, the greater the acceptance of the advocated position.

B. ANALYSIS OF VARIANCE

Source	df	MS	F
Dilemma (D)	1	3.600	1.33
Mode of Performance (M)	1	10.000	3.70*
D X M	1	.500	< 1
Error	36	2.700	

* $p < .07$.

Neither the expected Dilemma main effect nor the interaction was significant although the means for both Moral Dilemma conditions were, as expected, higher than those for their corresponding Hedonic Dilemma conditions. There was, however, a marginally significant "improvisation effect." Since neither of the simple effects comparisons between Improvisers and Oral Readers within a single dilemma reached significance, and since the subsamples were selected to test an interaction prediction, it is rather difficult to make inferences from this effect.

From the point of view of functional theory, or any of the other explanatory schemes for that matter, the major question raised by these data is why the Hedonic Improvisers who were high on performance orientation (in comparison to all the Hedonic Improvisers) should change nearly as much as the Moral Improvisers who were high on content orientation. One possibility is that low scores on the selection measure (i.e., relative content orientation) do not represent concerns with the worthlessness of the action, but rather with the positive quality of performance. The significant -.41 correlation between the

relative content orientation item and the question which asked about concern with making a "good" performance (i.e., the absolute performance orientation item) lend credence to this interpretation. However, when a partial correlation between relative content orientation and attitude score is computed for Hedonic Improvisers, controlling for absolute performance orientation, the correlation is no different than without the control (r = -.35). Thus, concern with positive aspects of the performance does not appear to account for the observed effect.

Another possible reason for the high opinion scores among Hedonic Improvisers in the subsample might be that these subjects, as well as the Moral Improvisers, were simply more involved in the experiment than those subjects having intermediate scores on relative orientation. This interpretation, however, is contradicted by available data which indicated no correlation (r = -.06) between relative content orientation and a question concerning involvement in the experiment for Hedonic Improvisers. Thus, the interpretation of this effect remains uncertain.

The resolution of hedonic dissonance was previously assessed by three measures: personal value, scientific value, and performance evaluation. When these were reexamined for the selected subsamples, only the scientific value item exhibited any statistically significant effects. The means for only this item are presented in Table 15A, while the corresponding analysis of variance appears in Table 15B.

According to hypothesis 5, there should have been both a Dilemma main effect and an interaction. Since only the latter was found, there is only partial support for that hypothesis. However, as pointed out earlier, some advocates of functional theory (Sheposh & Baron, 1968) would predict only the interaction, since they presume

TABLE 15

A. MEAN SCIENTIFIC VALUE SCORES FOR SELECTED SUBSAMPLES [a]

Dilemma	Mode of Performance	
	Improvisation	Oral Reading
Moral	4.60	4.30
Hedonic	3.80	4.90

B. ANALYSIS OF VARIANCE

Source	df	MS	F
Dilemma (D)	1	.100	< 1
Mode of Performance (M)	1	1.600	1.56
D X M	1	4.900	4.77*
Error	36	1.030	

[a] All means are based on an N of 10 subjects.

[b] The higher the mean, the greater the reported scientific value.

* $p < .05$.

that subjects experiencing moral dissonance could reduce their dissonance along this dimension. The insignificant trend among Moral Dilemma subjects as well as the significant difference between Hedonic Dilemma conditions are both, therefore, consistent with that interpretation.

Summary

Overall, relatively little support for the functional interpretation has been provided by the data of the present study so far reviewed. Thus, the total sample, while providing no evidence of arousal effects (i.e., no evidence supportive of hypotheses 1, 2 and 3), did exhibit one weak resolution effect. That is, there was a tendency for Moral Dilemma subjects to accept the advocated position more than Hedonic Dilemma subjects (which was strengthened by controlling for perceived effort). When those who failed to improvise or who resisted too much were excluded from the analysis, there was evidence of an additional resolution effect consistent with an interpretation of functional theory (i.e., an interaction on a measure of perceived scientific value of the task).

Selecting subjects for whom the manipulations apparently worked did not really yield better results. Thus, although there was evidence that these subjects had the proper orientations, there was only one indication that arousal was affected in the anticipated fashion (and even this slightly greater hedonic arousal among Hedonic Dilemma subjects was not clearly interpretable as a result of other findings on this same measure). Furthermore, there was only a single indication (again on the measure of scientific value) that resolution consistent with a functional interpretation might have occurred.

There is still the possibility (as noted in Chapter I) that different processes were operating within the different experimental conditions, despite the absence of conclusive direct evidence that these processes had the predicted impact on dependent measures. Several additional internal analyses and correlational analyses were undertaken to see whether any evidence could be marshalled for the

mediating mechanisms suggested by functional theory. In addition, data relevant to possible alternative interpretations were explored. The next chapter is devoted to an exploration of these data.

CHAPTER V

RESULTS AND DISCUSSION:

TESTING SOME REFINED HYPOTHESES AND ALTERNATIVE INTERPRETATIONS

Functional interpretation

Mediation of moral dissonance: A refined hypothesis. Functional theory, it has been noted, suggests a close relationship between guilt or doubt arousal and opinion change. The relationship actually suggested, however, may not be as simple or direct as hypotheses 1 and 4 make it appear. In fact, it will be suggested that hypothesis 1, as presently stated, probably is oversimplified.

Considering the impact of morally dissonant behavior on guilt arousal, it seems quite likely that some subjects in the present experiment would experience a relatively high level of guilt. Others, however, might be only minimally aroused, if at all. Subsequently, those who remained unaroused should exhibit relatively little opinion change. Among those initially aroused two subsequent patterns of responding are possible. Some subjects should be able to reduce their residual guilt to its previous level by changing their opinions. Others, however, who for some reason fail to change their opinions should experience no such guilt reduction.

Operationally this means that no attitude change would be predicted for subjects high in residual guilt, on the assumption that their unreduced guilt betokens a failure to utilize such guilt-reducing

mechanisms as attitude change. Those low in residual guilt should include two subgroups: one of individuals in whom guilt was initially aroused but who were able to reduce it by changing their opinions, and who should therefore exhibit a considerable amount of such change; the other of individuals in whom guilt was never aroused and who therefore had no reason to change their opinions. Overall, this leads to the prediction that subjects high in residual guilt should exhibit less change of opinion than those low in residual guilt to the extent that the initial arousal of guilt was successful among at least a subset of the subjects. [1] Analogous arguments and predictions can be made in terms of doubt arousal and resolution.

In order to test the prediction of guilt mediation, subjects in each of the experimental conditions were divided into those reporting some residual guilt (i.e., those answering 5, 6 or 7 on the agree-disagree "guilt" item reported in Table 4) and those reporting no residual guilt (i.e., those answering 1, 2, 3 or 4 on this same scale). To test the prediction of doubt mediation subjects in each of the experimental conditions were divided into those reporting some residual doubt (i.e., those scoring 3 or higher on the "doubt" item) and those reporting little or no residual doubt (i.e., those scoring 1 or 2 on this item). Considering these new splits as third factorial

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[1] Straightforward correlation predictions, even for subjects within a particular condition, are impractical, according to this logic, unless adequate measures of initial arousal, and not just residual arousal, are perfected. Since little has been accomplished in measuring even cognitive dissonance arousal, let alone arousal of alternative motivational systems such as those postulated by functional theory, correlational evidence is of little use in isolating the mediational roles of varieties of motives.

TABLE 16

A. MEAN POSTTEST OPINION SCORES WITH HIGH-LOW GUILT OR DOUBT AS THIRD FACTOR

Measure of Moral Arousal	Level of Arousal	Dilemma: Moral		Dilemma: Hedonic	
		Improvisation	Oral Reading	Improvisation	Oral Reading
Guilt	High	1.71(7)[a]	2.00(7)	1.80(5)	1.40(5)
	Low	2.95(22)	2.64(22)	2.33(24)	2.00(24)
Doubt	High	2.50(14)	2.78(9)	2.33(15)	2.10(10)
	Low	2.80(15)	2.35(20)	2.14(14)	1.79(19)

B. ANALYSES OF VARIANCE

Source	df	Measure of Moral Arousal: Guilt MS	Guilt F	Doubt MS	Doubt F
Arousal (A)	1	10.535	5.35**	.633	< 1
Mode of Performance (M)	1	.654	< 1	.953	< 1
Dilemma (D)	1	3.643	1.85	7.263	3.52*
A X M	1	.328	< 1	1.225	< 1
A X D	1	.655	< 1	.232	< 1
M X D	1	.587	< 1	.285	< 1
A X M X D	1	.520	< 1	.632	< 1
Error	108	1.970		2.066	

[a] Ns appear in parentheses. The higher the mean, the greater the acceptance of the advocated position.

* $p < .07$. ** $p < .025$.

dimensions of two experimental designs, analyses of variance [2] were performed on posttest opinions for each of the resulting 2 X 2 X 2 designs. The means for these new designs are presented in Table 16A, while the corresponding analyses of variance appear in Table 16B.

The significant Arousal main effect on the guilt measure is consistent with the present interpretation. It is also not surprising that the mean opinion change scores were higher (though not significantly) for the low guilt Moral Dilemma subjects', since the former were expected to experience more guilt to begin with. Thus, the low guilt subjects in the Moral Dilemma condition probably included more individuals who were initially aroused but subsequently reduced their guilt through opinion change than the low guilt subjects in the Hedonic Dilemma condition, while the latter probably included more individuals who were initially unaroused than the former.

This evidence gives some real credence to one aspect of the moral dissonance interpretation. In other words, it shows that the groups whom one would expect, on theoretical grounds, to contain the largest proportion of individuals who first experienced guilt and then reduced it (i.e., the low guilt subjects in the Moral Dilemma conditions) are also the groups that show the greatest amount of attitude change. It also calls into question the adequacy of an absolute hypothesis, like hypothesis 1, which holds that guilt would <u>manifest</u> itself more strongly in the conditions most strongly <u>arousing</u> it. That is, hypothesis 1 is reasonable only insofar as one is speaking of <u>initial</u> moral dissonance arousal. To the extent that any resolution processess occur, the

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[2] Because the splits were done independently for each condition, the yoked character of the designs was lost. The analyses of variance were not, therefore, of the repeated measures variety. Instead, unweighted means solutions for factorial experiments with unequal Ns were employed.

manifest moral dissonance will be a complex function of these as well as of initial arousal. It is fairly clear that a more interdependent view of such relations is probably needed.

Similar effects on posttest opinions were not obtained when subjects were split on the measure of doubt. Only a marginal Dilemma main effect, also found without the internal analyses (see Table 7), was obtained. Thus, there is no evidence that doubt affected opinions in the fashion suggested.

Mediation of hedonic dissonance: A refined hypothesis. A logical argument similar to that made with regard to the oversimplification of the hypotheses dealing with moral dissonance arousal and resolution (i.e., hypotheses 1 and 4) can be offered for the comparable hypotheses dealing with hedonic dissonance arousal and resolution (i.e., hypotheses 2 and 5). Thus, subjects engaged in a hedonic dilemma, in an experiment such as the present one, might experience differential hedonic dissonance arousal. Those subjects initially unaffected should not exhibit any task revaluation, while those initially affected should either (1) revalue the task and reduce their hedonic dissonance or (2) fail to adjust their task-attitudes and hence exhibit residual hedonic dissonance. Thus, to the extent that arousal of hedonic dissonance in the present study was successful, those reporting high residual hedonic dissonance should exhibit less change indicative of hedonic dissonance reduction, on at least one dimension of task evaluation, than those low in such residual arousal.

In order to test this prediction subjects in each of the experimental conditions were divided into those reporting some residual hedonic dissonance (i.e., those whose scores on the Hedonic Arousal

factor (I) were greater than 4) and those reporting little or no such dissonance (i.e., those whose Hedonic Arousal factor scores were less than 4). Using this split as a third factorial dimension of the design, analyses of variance were performed on each of the three measures of hedonic dissonance resolution (i.e., the Performance Evaluation factor (III), the "personal value" item, and the "scientific value" item) for the resulting 2 X 2 X 2 design. Means for the "personal value" item are reported in Table 17A, while results of the corresponding analysis of variance appear in Table 17B.

The significant Arousal main effect on this measure is consistent with the present interpretation. It is also not surprising that the difference between arousal conditions was greater (though not significantly) for the Hedonic Dilemma subjects, since this mode of resolution is

TABLE 17

A. MEAN PERSONAL VALUE SCORES WITH HEDONIC AROUSAL AS THIRD FACTOR

Hedonic Dissonance Arousal	Dilemma			
	Moral		Hedonic	
	Improvisation	Oral Reading	Improvisation	Oral Reading
High	4.00 (10)[a]	4.00 (13)	3.20 (15)	3.45(11)
Low	4.68 (19)	4.38 (16)	4.79 (14)	4.67 (18)

[a] The Ns for each mean appear in parentheses. The higher the mean, the greater the personal value.

B. ANALYSIS OF VARIANCE

Source	df	MS	F
Arousal (A)	1	25.974	11.82*
Mode of Performance (M)	1	.049	< 1
Dilemma (D)	1	1.565	< 1
A X M	1	.780	< 1
A X D	1	5.313	2.42
M X D	1	.322	< 1
A X M X D	1	.006	< 1
Error	108	2.198	

* $p < .005$.

presumably most relevant to their dilemma. Thus, these data suggest that the role of hedonic arousal in mediating task-attitude change was most clearcut for those subjects who should have experienced more initial hedonic dissonance arousal.

No significant effects were observed on either of the other hedonic dissonance resolution measures. [3] They did not, therefore, provide any further support for the present predictions. Nevertheless, there appears to be sufficient evidence from the "personal value" item to suggest that hedonic arousal might play the mediational role suggested by functional theory.

[3] Although the absence of a significant Dilemma X Mode of Performance interaction on the "scientific value" measure appears to be in contrast to data reported earlier (Table 11), it should be noted that that effect was found only with nonimprovisers and resisters excluded from the analysis. For the total sample, no significant effects were found on this dimension.

Content mediation interpretation

The simplest alternative explanation of the differential findings of the studies by King and Janis (1956) and Zimbardo (1965) argues that differences in the relative persuasiveness of the content in Improvisation and Oral Reading conditions in these two studies were responsible for differences in the amount of opinion change induced. In the present study a yoked design was employed to eliminate content differences between subjects in Improvisation and Oral Reading conditions receiving the same dilemma instructions. Accordingly, the previously reported absence of a Mode of Performance main effect on posttest opinion scores (Table 7) is completely consistent with this content mediation interpretation. There is, however, some additional evidence which questions the adequacy of this hypothesis.

If the content of speeches produced by Improvisation subjects is a crucial mediator of opinion change for Oral Readers as well as for Improvisers, then there should be a substantial positive correlation between the opinion change exhibited by a particular Improviser and his content-yoked Oral Reader. The observed correlation ($r = .18$), however, was relatively small and insignificant ($t = 1.37$, $df = 56$, $p > .10$). Even for subjects in the Moral Dilemma conditions, for whom content factors are supposedly more crucial (according to functional theory) the correlation reached only .24 ($t = 1.29$, $df = 27$, $p > .20$). While this evidence provides a fairly strong disconfirmation of the hypothesis that opinion change among Oral Readers and Improvisers is affected by common aspects of the improvised speeches, it is still possible that

different aspects of the content constitute important mediators of change for subjects in different performance conditions.

In order to test this notion, correlations were calculated independently for subjects in each of the experimental conditions between posttest opinions and four measures of the speech content. These measures (total word count and number of outline, nonoutline, and resistant arguments) were derived from a content analysis of speeches produced by Improvisers. The within condition as well as the overall correlations of each of these measures with posttest opinions are presented in Table 18.

TABLE 18

CORRELATIONS OF OPINION SCORES AND MEASURES OF THE SPEECH CONTENT

Measure	Within Condition Correlations for				Overall Correlations
	Moral		Hedonic		
	Improvisers	Oral Readers	Improvisers	Oral Readers	
1. Total word count	-.01	.09	-.27	.02	-.02
2. Outline arguments	-.01	.03	-.22	.09	-.05
3. Nonoutline arguments	-.06	.01	-.19	.05	-.03
4. Resistant arguments	.07	.45*	-.02	-.04	.04

* $p < .02$.

These correlations were analyzed according to the procedure suggested by Steiner and Darroch (1969) in order to see whether there were differences in correlations that could be attributed to the experimental

conditions. [4] None of the measures of positive content (i.e., excluding resistance) was correlated differentially as a function of condition. Moreover, none of the positive content measures was significantly correlated with opinion change either overall or within any single experimental condition.

Interestingly, there was a significant "Dilemma main effect" ($z=2.28$, $p < .05$) found on the measure of resistance, indicating that Moral Dilemma subjects had opinions more in the advocated direction to the extent that their speeches contained examples of resistant arguments. These results were particularly striking for Moral Oral Readers. This effect is clearly not derivable from the content mediation interpretation since the presence of resistance should, according to that approach, reduce the impact of a persuasive message. [5] There is, thus, no support in any of these data for a content mediation hypothesis.

One of the findings which suggested this alternative explanation was Zimbardo's (1965) report that his Oral Reading subjects who exhibited slightly more opinion change felt their speeches were more logical than did his Improvisation subjects. Although this measure of the speech content is clearly subjective, the discussion in Chapter I of this paper considered these data as representing something objective about the speeches in the two conditions. Whether or not such ratings

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[4] This technique basically involves Fisher's test of differences between pairs of correlations transformed to the normal equivalents by means of Fisher's r to z transformation. The "main effects" and "interactions" are examined by comparing pairs of z scores which are summed across either rows, columns or diagonals.

[5] It is possible, however, that a somewhat different content mediation interpretation could be made of this finding; namely, that the two-sided message was simply more effective than the one-sided message (Hovland, 1957). This, however, would not explain the absence of a similar effect for Hedonic Oral Readers.

are, in fact, veridical can be checked in the present study since the speeches, within each dilemma, were constant for Improvisers and Oral Readers.

Two items on the questionnaire asked subjects to indicate the extent of their agreement or disagreement with the statements "My speech was thoughtful" and "My speech was logical." The means obtained by subjects in each of the experimental conditions are presented in Table 19A, while the corresponding analyses of variance appear in Table 19B.

The Mode of Performance main effect as well as the marginal interaction effect for the "speech logical" measure suggest strongly that these judgments represent something other than veridical judgments of the speeches themselves. It is, however, possible that Improvisation and Oral Reading subjects are making similar judgments, systematically varying only the portion of the scale which they use.

TABLE 19

A. MEAN SUBJECTIVE SPEECH EVALUATION SCORES [a]

Measure	Dilemma			
	Moral		Hedonic	
	Improvisation	Oral Reading	Improvisation	Oral Reading
Speech thoughtful	4.07[b]	3.59	4.07	3.72
Speech logical	4.48	4.24	4.83	3.55

[a] All means are based on an N of 29 subjects.

[b] The higher the mean, the greater the thoughtfulness or logic.

B. ANALYSES OF VARIANCE

Source	df	Measure: Speech Thoughtful MS	F	Measure: Speech Logical MS	F
Between Subject Pairs					
Dilemma (D)	1	0.138	< 1	0.862	< 1
Error (between)	56	2.405		2.881	
Within Subject Pairs					
Mode of Performance (M)	1	4.966	2.36	16.690	6.21**
D X M	1	0.138	< 1	7.759	2.89*
Error (within)	56	2.105		2.688	

* $p < .10$.

** $p < .025$.

To test this possibility the responses made on these two items by Improvisers and their content-yoked Oral Readers were correlated. Neither correlation even approached significance when the overall correlations were examined (for the "thoughtful"item r=.07 and for the "logical" item r=.01). Even for subjects in the Moral Dilemma conditions, for whom content factors are supposedly more crucial (according to functional theory), the correlation reached only .24 for the "logical" item (t=1.29, df=27, $p < .20$). There is, thus, almost no evidence that these judgments were simply veridical. Further tests based on these measures to determine whether there is evidence that the content is the crucial mediator of opinion change are, therefore, inappropriate.

Incentive theory interpretation

Most of the data relevant to a test of the mediating processes suggested by incentive theory have already been presented. Thus, the finding, reported earlier, that there was a marginally significant Dilemma main effect on the posttest opinion measure (i.e., more acceptance among Moral Dilemma subjects), despite the fact that there were no differences between conditions on any of the objective content measures, is inconsistent with this interpretation. Moreover, the data reported in Table 18, which suggest no role for positive content factors (i.e., facilitating responses according to incentive theory) and a positive role, at times, for resistance (i.e., an inhibiting response according to incentive theory) in mediating opinion scores, are clearly at odds with this approach.

There is, however, the possibility that other types of facilitating responses might have mediated the obtained differences of posttest opinions. The two measures of subjective speech evaluations considered in Table 19 would be considered facilitative reactions by incentive theorists. In order to test the notion that perceptions of the content as thoughtful or logical would be associated with greater acceptance of the advocated position, correlations were calculated between each of these two measures and posttest opinions. The correlation for the "speech logical" item ($r=.27$) was positive and significant ($t=2.99$, $df=114$, $p < .01$), while that for the "speech thoughtful" item ($r=.19$) was positive and marginally significant ($t=2.07$, $df=114$, $p < .10$). There is, thus, some apparent support for an incentive theory interpretation of these results. At best, however, this can account for only 8.5 percent of the variance of posttest opinion scores.

Dissonance theory interpretation

According to Zimbardo's (1965) dissonance interpretation, differences in effort should be the crucial mediators of differences in opinion change induced in an experiment such as the present one. Data presented earlier (Table 8) indicated that there was a significant difference in perceived effort in the direction Zimbardo would predict (i.e., Improvisers reported greater effort than Oral Readers). There was, however, no Mode of Performance effect on the posttest opinion measure for either dilemma. Furthermore, the correlations between the effort factor scores and opinion scores for subjects in all conditions were low and insignificant. Moreover, when the analysis of posttest opinion scores was performed, statistically controlling for effort (Table 9), the Dilemma main effect was enhanced rather than eliminated. There is, thus, no evidence for Zimbardo's dissonance interpretation.

Another dissonance interpretation would stress the difference in importance of the dissonant cognitions involved in the different dilemmas as the key to mediation of opinion change. Since the issue was constant in both dilemmas and data noted before (p. 74) showed no differences in speech content or evaluations, as a function of the dilemma instructions given to subjects, only differences in the importance of the action-cognition could affect the opinion scores. This approach would consider the action taken by subjects in Moral Dilemma conditions as clearly more important than that taken by subjects in Hedonic Dilemma conditions, since the former had a tangible consequence (i.e., influencing another person) while the latter had no such consequence (i.e., it was only for practice).

Data are available from the present study to test (a) whether subjects in the Moral Dilemma conditions felt their action more important than did Hedonic Dilemma subjects and (b) whether such perceptions were related to the obtained opinion scores. Three items, included in the questionnaire, are relevant to subjects' perceptions of the importance of their action. They asked subjects to indicate the extent of their agreement or disagreement with the statements "My participation was personally valuable," "My participation was scientifically valuable," and "The experiment was involving." Data on the first two questions, reviewed earlier, indicated no significant effects on either measure for the total sample. When nonimprovisers and resisters were left out, however, a significant interaction on the scientific value measure was found (Table 11). In that analysis the effect predicted by this dissonance interpretation occurred only for Improvisation subjects, while the reverse was true for Oral Readers. Thus, according to this approach, there should have been an interaction, and not the observed main effect, on the opinion measure.

The third item, like the others, when subjected to an analysis of variance (with or without the nonimprovisers and resisters) yielded no significant effects. Nevertheless, correlations between each of the three measures and opinion scores were examined for subjects in each of the experimental conditions. None of the correlations for the first two measures was significant, but on the third ("experiment involving") item the correlations for the Moral Oral Readers ($r = .38$), Hedonic Improvisers ($r = .41$), and all subjects together ($r = .26$) were significant ($p < .05$ for all three). There is, thus, some indirect evidence supporting this

dissonance interpretation (i.e., one that considers the importance of the action-cognition as mediating acceptance of the advocated position).

One final dissonance interpretation related in some ways to the one just considered argues that commitment is the crucial mediator of opinion change in situations of counterattitudinal advocacy. Subjects in the present study were asked "To what extent do you feel committed to the position you supported in your speech?" Answers were given on a 7-point scale labelled at the ends and in the middle as follows: (1) "Not at all committed," (4) "Moderately committed," and (7) "Extremely committed." The means for all conditions ranged from 1.70 to 2.26 and did not yield any significant effects when subjected to an analysis of variance. Thus, subjects were, in most cases, relatively uncommitted. Unfortunately, this measure is not really a good measure of commitment (in the sense used by dissonance theorists of commitment to the action-cognition) since it assesses only commitment to the content. [6] A really adequate measure of commitment, to test the dissonance hypothesis, was not available in the present study.

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[6] As such, it may simply represent an alternative measure of acceptance of the advocated position. The rather high correlations between this measure and the posttest opinion item (from .49 for Hedonic Oral Readers to .62 for Moral Improvisers) tends to give some credence to this suggested parallelism.

CHAPTER VI

OVERVIEW AND CONCLUSIONS

The present study was designed specifically to test five hypotheses derived from Kelman and Baron's (1968a, b) functional theory. In order to place the findings reported in the previous chapters in perspective, the results will be summarized briefly as they relate to this initial purpose.

Arousal hypotheses

Hypothesis 1. This hypothesis predicted greater indications of content orientation, guilt, and doubt among subjects experiencing moral dilemmas (especially for Moral Improvisers) than among subjects experiencing hedonic dilemmas. None of the measures relevant to these dimensions exhibited either the predicted main or interaction effect. There was, therefore, no support for this hypothesis.

Hypothesis 2. This hypothesis predicted greater indications of performance orientation and hedonic dissonance arousal among subjects experiencing hedonic dilemmas (especially for Hedonic Oral Readers) than among subjects experiencing moral dilemmas. None of the measures relevant to these dimensions exhibited either the predicted main or interaction effect. There was, therefore, no support for this hypothesis.

Hypothesis 3. This hypothesis predicted greater indications of general discomfort (1) among subjects in the Moral Improvisation than

among subjects in the Moral Oral Reading condition and (2) among subjects in the Hedonic Oral Reading condition than among subjects in the Hedonic Improvisation condition. The measures relevant to this dimension exhibited no such interaction effect. There was, therefore, no support for this hypothesis.

Overall, there is almost no indication that manipulation of the type of dilemma had the predicted effects on the arousal of moral and hedonic dissonance, either directly or in interaction with the mode of performance. Some evidence was reported, however, which suggested that the mode of performance manipulation did produce some direct (if slight) arousal effects. The general pattern of these findings suggests that subjects in all conditions were basically concerned with their performance, but that Improvisers tended to have some moral concerns in addition to these (i.e., they were somewhat more concerned with the content, had more doubts, and were generally more uncomfortable than were Oral Readers).

Resolution hypotheses

Hypothesis 4. This hypothesis predicted greater acceptance of the advocated position among subjects experiencing moral dilemmas (especially for Moral Improvisers) than among subjects experiencing hedonic dilemmas. The predicted main effect, but not the interaction, was obtained in several analyses of this dimension but, in each case, the significance was only marginal. Moreover, when the control conditions were considered, even this marginal effect disappeared. Furthermore, comparable analyses on subsamples, for whom there was evidence that the manipulations were successful, yielded only a marginally significant "improvisation effect." There was, therefore, support for only part of this hypothesis and this support was, at best, weak and inconclusive.

Refined hypothesis 4. In the course of interpreting these data a detailed consideration of the logic underlying hypotheses 1, 3, and 4 was made which suggested a basic conflict between these arousal and resolution expectations. Accordingly, a somewhat more refined "hypothesis," which took account of the interrelationships between these two ongoing processes, was postulated. It predicted that those subjects who were high in residual moral dissonance would exhibit less opinion change than those who were low in such residual dissonance, especially among those initially given Moral Dilemma instructions. When subjects were split on the measure of residual guilt, the first part of this prediction (i.e., the arousal effect) received strong confirmation, and the interaction was in the right direction (i.e., the effect was stronger among Moral Dilemma subjects) but not significant. No such pattern was found with subjects split on residual doubt. There was, therefore, reasonably good support for the hypothesis that guilt acts to mediate opinion scores in a manner generally consistent with the functional interpretation.

Hypothesis 5. This hypothesis predicted greater cognitive distortion of the task and role (in the direction of increased favorability) among subjects experiencing hedonic dilemmas (especially for Hedonic Oral Readers) than among subjects experiencing moral dilemmas. None of the three relevant measures exhibited either the predicted main or interaction effect. However, when an internal analysis was performed, eliminating subjects who did not improvise or who exhibited too much resistance, a significant interaction in the predicted direction was obtained on one of the measures. Furthermore, this same measure exhibited a significant interaction effect in the anticipated direction when evaluated for the selected subsamples for whom the manipulations were apparently

successful. There was, therefore, some weak support for at least part of this hypothesis.

Refined hypothesis 5. Using logic analogous to that used in formulating refined hypothesis 4, a basic conflict was examined between the predictions made by hypotheses 2, 3, and 5. A refined hypothesis was developed, predicting that those subjects who were high in residual hedonic dissonance would exhibit less cognitive distortion of the task and role than those who were low in such residual dissonance, especially among those initially given Hedonic Dilemma instructions. When subjects were split on the hedonic arousal factor, the first part of the prediction (i.e., the arousal effect) received very strong confirmation for one of the three resolution measures, but the interaction, although in the expected direction, was not significant on this same dimension. The other hedonic resolution dimensions failed to exhibit these effects. There was, therefore, reasonably good support for the hypothesis that hedonic arousal acts to mediate some modes of hedonic dissonance resolution (especially perceptions of the value of the subject's role) in a manner generally consistent with the functional interpretation.

Overall, evidence supporting the original resolution hypotheses is rather weak and unreliable. The new refined hypotheses, however, which incorporate the logic of both the arousal and resolution hypotheses, received considerable support. Nevertheless, this analysis is admittedly post hoc and clearly in need of testing in a study actually confirming the original resolution hypotheses (i.e., one having more than within cell variance to explain).

Improvisation effect

More generally, the present study was designed to examine the

nature of the "improvisation effect" in two ways. It was first an attempt to explore the nature of the operations necessary to induce post-action shifts in opinion. It was also, however, an attempt to examine a variety of measures (e.g., guilt, hedonic arousal, effort, etc.) thought to indicate the operation of accompanying mediating processes. Unfortunately, for both purposes, there was no evidence that subjects in any of the active experimental conditions (i.e., Improvisation and Oral Reading conditions) exhibited any more opinion change than did subjects passively exposed to the same message. Moreover, none of these conditions was different on posttest opinions from the No Communication Control group.

These findings do not parallel those of either King and Janis (1956) or Zimbardo (1965). [1] Furthermore, they are disparate from the majority of studies using such procedures (Culbertson, 1957; Elms, 1966; Greenwald & Albert, 1968; Harvey & Beverly, 1961; Janis & King, 1954; Janis & Mann, 1965; McGuire, 1961; Scott, 1957, 1959; Watts, 1967) which indicated the presence of an "improvisation effect" when subjects improvised speeches or essays.

One possible explanation for the absence of an improvisation effect can be offered in terms of the Content-yoked Control procedure employed in two conditions in the present experiment. The task given to subjects, to form impressions of a speaker's personality, is very similar to those used in several studies on the role of distraction from a speech on its persuasiveness (Allyn & Festinger, 1961; Haaland

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[1] The former found greater opinion change among improvisers than among either oral readers or passively exposed subjects. The latter found no difference between the first two but found both changed more than passive subjects.

& Venkatesan, 1968). Although there is some dispute about the nature of the mechanism mediating the "distraction" effect, it has generally been found to increase the impact of persuasive messages. Thus, it is possible that these control conditions were as persuasive as their corresponding experimental conditions, but for different reasons. This hypothesis, however, does not appear very plausible, since the third control condition, which received no message at all, did not differ from any of the other conditions.

A second possibility might be suggested in terms of the temproal distribution of the various conditions. Yoking the content of the various conditions required a delay of about a week between the Improvisation conditions and the Oral Reading and Content-yoked controls. In the intervening week the first prolandlord article appeared in the student newspaper. If this article had an impact on subjects in the present study, it would have raised the scores of those in the Oral Reading and control groups, thus reducing the apparent impact of improvisation.

One piece of evidence suggesting that there might be some validity to this speculation is that subjects in a pilot study conducted a week before the present study, who were not exposed to any message in either the experiment or in the newspaper, had a mean approximately one point lower (i.e., 1.44 versus 2.48) than that obtained by the comparable No Communication Control group in the final study conducted after the appearance of the prolandlord article. Since the issue was selected on the basis of this pilot study mean, however, it is possible that the higher means in all of the conditions in the final study simply represent statistical regression.

Whatever the reason, the absence of an improvisation effect among subjects in either dilemma condition made it difficult to draw conclusions about the mediation of improvisation-induced opinion change. Nevertheless, it was possible to consider the mediation of within cell differences of opinion. Various internal and correlational analyses provided some evidence for the functional interpretation of the mediation of these within cell differences. Moreover, there was little evidence for any of the competeting interpetations of opinion mediation. However, this partial success must be qualified since the study was designed to maximize the moral-hedonic distinction made by functional theory rather than to test the other theories at their maximal advantage.

The absence of a significant improvisation effect, although shedding little light on the dynamics of previously observed opinion shifts, does suggest that improvisation per se may not always enhance acceptance of the position advocated in comparison to passive receipt of the message. This study, however, was of no help in specifying the operational differences which would produce or eliminate this effect, since the effect was not found in either of the dilemma conditions. It is thus not possible to say whether it is the creative aspect, the motive arousal, or some other aspect of improvisation which has been responsible for the oft observed changes.

Arousal and resolution

Although this study has not answered many of the questions raised initially, it has raised some issues which, if adequately addressed, should help clarify the nature of the processes mediating post-improvisation opinions. More than any of the earlier studies which tested the functional interpretation (Baron, Kelman, Sheposh & Johnson, 1968; Lubalin, Kelman & Dabbs, 1968; Sheposh & Baron, 1968) the present

study, with its attempt at more refined hypotheses, stresses the need for adequate measures of motive arousal. To test the implications of the interdependence of arousal and resolution it is necessary to measure the initial amount of arousal induced by the experimental procedures, as well as to assess the residual arousal and resolution effects. Some research has been done to assess arousal independently of resolution using continuous monitoring of the physiological components of arousal (Brehm, Back & Bogdonoff, 1964; Gerard, 1967, 1968). It is not clear, however, what the impact of such assessment procedures would be on the phenomenon under study. Moreover, the distinction of moral, hedonic or simple cognitive dissonance by these means is quite a formidable task which has not yet been attempted.

The independent assessment of arousal and resolution is a futile exercise, however, without a comprehensive knowledge of the temporal nature of these interdependent processes. That is, assuming that a method of continuous recording of different motivational processes is not likely to be available in the near future, one needs to know when to administer an arousal measure so that it assesses initial arousal and when to administer one so that it reveals the end of the motive reduction process. Finding this out without continuous measurement is a rather costly affair, involving the use of a large number of experimental groups which are assessed at various intervals--before, during, and after the discrepant action. Some research has been done using this paradigm (Crano & Messe, 1969; Festinger, 1964), but it has merely traced the resolution process, and that only in a very gross way.

There are many questions that will need answering before the exact nature and interdependence of arousal and resolution are known. A

sampling of some of the more important problems would include the following: When does arousal occur, before or after the action itself? Is arousal instantaneous or does it build up gradually? If the latter, is the growth of arousal a continuous or discontinuous function and are there ever reversals? Does resolution begin as soon as arousal starts to build up or does it occur only when arousal has reached its maximum? Is there a delay or lag in the relationship between these two variables? If so, which leads and which follows at various points in the arousal-resolution sequence? Does either process continue beyond the termination of the other? Do these processes or the parameters of these processes vary as a function of the particular motive aroused?

Very few of these questions have been addressed in the relevant literature and none has been adequately answered. That these issues are of major concern to researchers in this area with a variety of theoretical biases is attested to by the entire section devoted to the "temporal course of inconsistency reduction" (Aronson, 1968; Janis, 1968; Jecker, 1968; Miller, 1968; Walster & Berscheid, 1968) in the recent tome on cognitive consistency. The present study can only add further emphasis to the importance of finding answers to these questions, without making a positive contribution in its own right.

Beyond the strictly temporal questions, there are two others concerning factors controlling arousal and resolution that are raised by the refined hypotheses. By distinguishing between those subjects who are and those who are not aroused, and--among the former--between those who do and those who do not experience motive reduction, these hypotheses call for an analysis of the factors that determine (1) whether a particular motive will or will not be aroused in a discrepant action situation, and (2) whether resolution will follow upon motive arousal or whether there

will simply be residual arousal. Cognitve dissonance theorists have focussed on answering the first of these questions (i.e., they have studied variables such as effort, incentives, and choice which they presume to affect the arousal of their single motive). They have dealt with the second question by assuming that attempts at resolution would take place whenever dissonance exceeded an individual's tolerance level for such cognitive inconsistency (Festinger, 1957). Operationally, this last point has usually been ignored by using situations assumed to be strong enough to produce intolerable dissonance in all subjects.

The occurrence of dissonance resolution, according to this approach, requires no positive explanatory concepts; it simply follows from sufficiently high arousal. In contrast, the case of arousal without resolution (i.e., residual arousal) requires dissonance theorists to employ extra-theoretical explanatory schemes. Thus, Brehm (1965), for example, in order to explain the failure of Elms and Janis (1965) to confirm dissonance theory predictions, argued that they had provided aroused subjects with cognitions which were too difficult to change. The fact that dissonance theorists assume that resolution is an almost certain result of arousal has resulted in a major weakness of dissonance theory: namely, its lack of a set of positive principles that specify the particular mode of resolution to be used in a given situation.

Functional theory, although taking a somewhat different perspective on most of these questions, is similar in its inability to account for failures to reduce motives aroused (i.e., residual arousal). While it argues that any given instance of arousal must be explained as a function of an individual's search of his own coping mechanisms (i.e., that arousal will take place only when this search results in some indication of a failure at coping), it implies that arousal, once it

occurs, will automatically lead to attempts at "handling" it. Unlike dissonance theory, it does contain some positive (if primitive) principles for the selection of modes of resolution, foremost of which is the principle that the particular resolution mode selected will be functionally relevant to the motive aroused. Nowhere, however, does it consider the circumstances under which dissonance (i.e., a motivational tension of any sort) might be aroused but not handled (i.e., resolved or at least defused).

Content factors

Earlier, it was noted that there was little relationship found between objective or subjective measures of various aspects of speech content and the dependent measures (particularly posttest opinion scores). Content factors were also discussed in the present paper, however, in connection with the issue selection phases of the pilot investigations (i.e., in pilot studies 1, 2 and 7). At that time the question of whether or not dilemmas of both moral and hedonic varieties could be produced using a single issue was left essentially unanswered. The assumption was made, in order to encourage pursuit of the most interesting issues, that it was possible. However, now that these paths have been explored the original question can once more be addressed.

It should be noted at the outset that it is extremely difficult to establish trends with only two examples of a variable (i.e., the "torture" and "landlord" issues in this case) even when there are "replications" of each example (as there were in the present series of studies). Thus, even though the present set of data provided very little support for the idea that the same issue might be used to produce

both moral and hedonic dilemmas, they cannot be taken as evidence that this cannot, in fact, be done.

One thing which becomes apparent, if the manipulation check data for all of the studies using only the "torture" issue are considered together, is that, whenever there is a consistent pattern of relations between the means of any two conditions (i.e., if one is consistently larger than the other) across the entire subset of studies with this issue, the same pattern tends to occur for the subset of studies using the "landlord" issue as well, and vice versa. The only exception to this finding occurred on the relative content orientation measure. In that case, the Hedonic Improvisers tended to exhibit greater content orientation than the Moral Improvisers when the "torture issue was used, but the reverse tendency was found when the "landlord" issue was used. It was, thus, found that changing the issue could actually change the nature of the relationships between the various conditions to be more or less consistent with functional expectations. In conjunction with the finding, for most of the other between mean comparisons, that this same switch from one issue to another did not change their relations, this suggests that there might be a possibility of producing different dilemmas with the same issue (in this case, the "landlord" issue).

What is discouraging in these data, however, is the fact that the relations actually observed consistently were not, in general, a function of the different dilemmas induced but, more often, a direct result of the mode of performance. Thus, there is little indication of how, or even whether these relations might be affected by changing the issue. Moreover, the fact that there was a considerable amount of inconsistency in the between mean comparisons, even for studies using the same issue, suggests

that, at least with the present sort of operations, issue factors might be relatively ineffective in comparison to exogenous influences (i.e., uncontrolled factors producing inconsistent relationships between the various conditions in studies which were conceptual or even literal replications of each other). Altogether, then, these data do not provide any strong support for the original assumption that a single issue could be found which would permit the creation of the alternative dilemmas, although they do not rule out this possibility.

Manipulation stability

One of the surprising findings of the present series of investigations was the apparent fragility or instability of some of the effects produced by the manipulations. This was especially true, unfortunately, for the procedure adopted in the eighth pilot study and "replicated" in the final study. The procedure for the "replication" was reported completely in Chapter II. Only the following differed in pilot study #8.

(1) The major difference involved a somewhat stronger choice manipulation (i.e., subjects were less pressured to volunteer). However, there was no significant impact of this change on a measure of perceived volition, although the means suggested that the more coerced subjects (i.e., those in the final study) felt slightly freer;

(2) Moral Dilemma subjects were not told explicitly to act as "a sincere advocate of the position" and were told that their speeches would convince others "of the validity of" the content of their speeches rather than "to accept" the content;

(3) Subjects in all conditions were given "Speech Preparation Instructions" which were worded in a slightly more ambiguous fashion than those used in the final study (e.g., they said "your speech" instead

of "the speech you will be reading," etc.);

(4) The underlined sentence on the first sheet of the "Instructions" was not underlined in the pilot study; and

(5) The order of the questions was somewhat different, with the orientation measures following the postexperimental questionnaire.

These relatively minor differences were apparently sufficient to produce major differences on all of the orientation measures, and on most of the arousal measures as well. Since none of these changes represents a theoretically meaningful alteration, one must conclude that the present set of experimental procedures were evidently so sensitive to exogenous factors (i.e., so weak relative to these "random" processes) as to be of dubious value in contributing to an understanding of the role of functional dilemmas in mediating the improvisation effect.

Methodological issues

It was noted at the outset that the present experiment was an attempt to combine two methodological approaches to the study of the mediation of the improvisation effect: the direct assessment of mediation and the systematic variation of counterattitudinal advocacy. It was hoped that this joint strategy would prove useful in untangling the various dynamic models explaining the predicted effects. This goal was severely hampered by the absence of clearcut effects on the major dependent measures. Nevertheless, the assessment of mediation proved of some use in interpreting the findings on these measures. In fact, the refined functional hypotheses could not have been tested, nor alternative interpretations explored, without measures of purportedly mediating arousal.

Generally, such direct assessment has much to recommend it, when it is possible. Its major advantage occurs whenever there is more than

a single theory making the same prediction on a dependent outcome for different reasons. However, even when there is only a single theory being tested, a stronger case can be made for the suggested mediation when it is assessed as an end in itself. Moreover, it is often desirable to employ distinct explanations for different conditions either before the experiment is performed or on a post hoc basis. Rarely are such interpretations given credence without evidence supportive of the proposed mediation.

There are several reasons, however, why this technique might not be advisable in particular cases. Thus, at the most general level, there is likely to be an assessment problem if the process varies over time. In that case, it is necessary to know the temporal sequence as well as the stage in the sequence at which assessment occurs in order to interpret the relationships among variables. In the present study, for example, it was not clear whether initial arousal or residual arousal was being assessed since the items were phrased in the past tense. Quite different interpretations can be made depending upon which of these was being measured. [2]

Even if a particular process leaves a measureable trace, the process of assessment may alter or even destroy the dependent behavior. In the present study there was no such problem, since assessment of the mediating processes was done after the dependent behaviors were measured. Thus, only the reverse problem - the impact of the behavior on the retrospective report of the process - was of concern.

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[2] Tests of the original hypotheses were based on the assumption that initial arousal was being assessed, while tests of the refined hypotheses were based on the assumption that the items assessed residual arousal.

Despite these possible weaknesses and problems with interpreting the results, it is still worthwhile, in many cases, to include measures directly assessing mediating processes. Many of the shortcomings of these procedures can be detected, if not corrected, by the use of appropriate experimental designs (Campbell & Stanley, 1963). Thus, the question of whether assessment destroys the process can be handled by including "assessment" as well as "no assessment" conditions, while the time sequence problem can be handled by making assessments at several different points (using either within or between subject designs).

Implications of the refined hypotheses

The success with which the refined hypotheses were confirmed suggests that some of the notions proposed and tested in earlier research on functional theory may be overly simple. Thus, Sheposh and Baron (1968) as well as Lubalin, Kelman and Dabbs (1968) attempted to measure arousal and resolution independently, without thoroughly considering their interdependence.

Lubalin, Kelman and Dabbs argued that arousal and resolution could be separated so as to constitute clearly independent dimensions. Factor analytic results in the present study lent credence to this position (in distinguishing two independent hedonic factors). Nevertheless, there is a somewhat misleading implication in the suggestion by Lubalin, Kelman and Dabbs that the measurement of these unique aspects should yield independently significant results for both arousal and resolution. The present paper argues, instead, that the mere fact that the two processes can be assessed separately does not imply their independence. Resolution, if successful, should reduce the initial arousal, even though that arousal is measured on a separate dimension.

According to this view, arousal hypotheses, such as the first three in the present study, only make sense to the extent that they refer to initial arousal. Refined hypotheses, admitting the logical possibility of arousal without resolution, in addition to the usually considered possibilities, are needed to thoroughly develop the implications of these process-interdependent notions for a functional analysis.

The implication of this study for theories of attitude-discrepant behavior in general are not particularly clear. Strong results on the resolution measures would have provided some proof that the conceptualizations of the other theories are limited too much to single process or single motive interpretations. As it stands, the successful confirmation of the refined hypotheses and the lack of success in confirming the alternative positions suggest tentatively that such a conclusion might be warranted. The general weakness of the present results, however, makes consideration of the nature of relations existing in this area a venture too speculative to pursue here without further empirical evidence.

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APPENDICES

Appendix A

Outline for Speeches

Some commonly made arguments in support of the assertion that: "Ann Arbor landlords are justified, by local conditions, in charging high rents to students."

I. A regularly transient population causes special problems.
   A. Lease breaking and accompanying legal expenses occur quite frequently.
   B. These occur in groups at the ends of semesters, especially when vacancies are hardest to fill as in the summer.

II. Property deterioration is greater with student tenants, since students have no long-term interest in the property or community.

III. Multiple adult residence in apartments creates additional problems for landlords.
   A. Greater demands for parking space are made.
   B. The number of people per dwelling unit is much greater than in residential communities, so property is damaged more quickly.

Appendix B

Verbal Instructions to Subjects in Recording Booth by E_2

Moral Improvisation

O.K. We are ready to begin. When I say "Begin" you are to start improvising your persuasive speech.

Note the time at which you start. You will have up to five minutes of recording time. The amber light will go on to warn you when there is one minute left. The red light will signal that your time is up, but you may talk ten seconds beyond it if you are in the middle of a sentence.

Please speak in your normal voice about one or two feet from the microphone. You may leave the earphones off while you are speaking if you prefer.

O.K. Whenever you are ready, please begin.

Moral Oral Reading

O.K. We are ready to begin. When I say "Begin" you are to start reading aloud the persuasive speech which I gave to you.

You will have as much time as it takes you to read your speech aloud.

Please speak in your normal voice about one or two feet from the microphone. You may leave the earphones off while you are speaking if you prefer.

O.K. Whenever you are ready, please begin.

Hedonic Improvisation

O.K. We are ready to begin. When I say "Begin" you are to start delivering your practice speech. We are recording it today so that you will have a chance to hear it next week. Will this same time next week be O.K.?

If YES -----Good.

If NO -----O.K. We'll have to call you again in a few days when we know what times are available and reschedule you.

Remember, today's talk is only for practice and will be erased after you listen to it. We will only evaluate the speech-making you do next time.

You will have up to five minutes to make your speech. The amber light will warn you when there is one minute left. The red light will signal that your time is up, but you may talk ten seconds beyond it if you are in the middle of a sentence.

Please speak in your normal voice about one or two feet from the microphone. You may leave the earphones off while you are speaking if you prefer. O.K. Whenever you are ready, please begin.

Hedonic Oral Reading

O.K. We are ready to begin. When I say "Begin" you are to start delivering your practice speech. We are recording it today so that you will have a chance to hear it next time. Will this same time two weeks from today be O.K.?

If YES -----Good.

If NO -----O.K. We'll have to call you again in a few days when we know what times are available and reschedule you.

Remember, today's talk is only for practice and will be erased after you listen to it. We will only evaluate the speech-making you do next time.

You will have as much time as it takes you to read your speech aloud. Please speak in your normal voice about one or two feet from the microphone. You may leave the earphones off while you are speaking if you prefer.

O.K. Whenever you are ready, please begin.

Appendix C

Questionnaire Instructions and Items [1]

We are also interested, at this point, in your evaluation of the speech you made and of the procedure used in eliciting your speech. The remainder of the questions, therefore, concern these areas.

Each of the first 19 items consists of a complete sentence making an assertion. After each sentence is a scale consisting of the numbers 1 through 7. The labels for this scale appear at the top of each page and go from "Strongly Disagree" (1) to "Strongly Agree" (7). You are to indicate the degree to which you agree or disagree with the assertion by circling the one number on each scale which best represents your feeling about the assertion.

Each of the last 6 items consists of a complete question. After each one is a scale consisting of the numbers 1 to 7 with labels at both ends and in the middle. You are to circle the one number which best indicates your answer to each question.

Please mark every item, making sure that you circle only one answer for each item.

1. Ann Arbor landlords are justified, by local conditions, in charging high rents to students.

2. Making this speech was boring.

3. My delivery was effective.

4. Making this speech made me feel guilty.

5. The experiment was interesting.

6. Making this speech was challenging and rewarding.

7. My delivery was convincing.

8. Making this speech made me feel uncomfortable.

9. The experiment was involving.

10. Making this speech was a waste of time.

11. My speech was thoughtful.

12. I was satisfied with my performance as a public speaker.

---

1 Items appearing without an accompanying scale (i.e., items 1 - 19) were of the agree-disagree type noted in the instructions. The adjectives used for the seven points were "strongly" (1 and 7), "moderately" (2 and 6), "slightly" (3 and 5), and "neither...nor" (4).

13. My participation was personally valuable.

14. The speech-making task was enjoyable.

15. Making this speech required considerable physical (behavioral) effort.

16. Making this speech required considerable psychological (emotional) effort.

17. Making this speech required considerable cognitive (intellectual) effort.

18. My speech was logical.

19. My participation was scientifically valuable.

20. How free did you feel to leave when you were offered that possibility?

Not at all free			Moderately free			Extremely free
1	2	3	4	5	6	7

21. To what extent did your speech raise doubts in your mind about the validity of your own position?

Not at all			Moderately			Extremely
1	2	3	4	5	6	7

22. Would you say you were more concerned with your delivery or with the content of your speech?

Delivery			Equally with both			Content
1	2	3	4	5	6	7

23. To what extent were you involved with the ideas you were expressing?

Not at all involved			Moderately involved			Extremely involved
1	2	3	4	5	6	7

24. To what extent were you involved in producing a good oral performance?

Not at all involved			Moderately involved			Extremely involved
1	2	3	4	5	6	7

25. To what extent do you feel committed to the position you supported in your speech?

Not at all committed			Moderately committed			Extremely committed
1	2	3	4	5	6	7

Appendix D

Postexperimental Questionnaire: Open-ended Items for Pilot Study Subjects

Now that the experiment is over we would like to know more about your impressions of various parts of the procedure. The following questions should be answered in relatively brief form, but should contain any information you think might be useful to us in future use of this technique. Please answer the questions in the order in which they appear.

1. What are your impressions of this expetiment?

2. Were you bothered by any part of the experimental procedure? If so, what bothered you? Why?

3. Do you have any suspicions about any part of this study? If so, what are they and when did you become suspicious?

4. Were there any parts of the instructions that you did not believe? If so, what were they?

5. Not every subject in this experiment is asked to do the same thing. What do you think other subjects might be asked to do that is different from what you were asked to do?

6. Not every subject in this experiment was given the same information about the nature of this experiment. What do you think other subjects were told about the experiment that is different from what you were told?

7. This study really had nothing to do with verbal aptitudes (persuading others). What do you think we are studying? [1]

8. What theory or theories do you think we are testing? What do you think we are predicting?

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[1] The underlined words were used in the version of this questionnaire given to subjects in the Hedonic Dilemma conditions, while the words in parentheses were used for subjects in the Moral Dilemma conditions.

Appendix E

Content-Yoked Control Group Instructions

In recent years social psychologists have become increasingly interested in the area of impression formation. One question of major interest is how people form impressions of other people. The present research project is concerned with finding those conditions which are sufficient for accurate personality impression formation.

The particular experiment in which you will be taking part today is an attempt to see how well people can evaluate a person's personality simply by reading a speech he has made. Following these instructions you will find a speech made earlier this term by a subject in another experiment. We have collected a great deal of information about his personality and will relate these to ratings you make after reading his speech. Each subject was asked to make a speech in support of the statement,
"Ann Arbor landlords are justified, by local conditions, in charging high rents to students."

Please read the speech only once; it is your first impressions that are important to us. When you finish the speech, go right on to the attached questionnaire.

Appendix F

Pilot Study Summary Statistics

TABLE 1

MEAN SELECTION CRITERIA SCORES OF FOUR ITEMS FROM PS1[a]

Item	Criterion Rating Scale			
	Agreement-Disagreement	Importance-Unimportance	Morality-Immorality	Security-Insecurity
Pro Capital Punishment	2.26[b]	5.15	2.70	5.29
Pro Shooting Looters	2.11	6.22	2.22	5.96
Pro Postal Snooping	1.95	4.93	2.37	5.67
Pro Torture in War	2.00	5.15	2.07	5.78

[a] These items are the ones (of 36) best meeting the combination of these four criteria.

[b] All means are based on an N of 27. The higher the number, the greater the agreement, importance, morality, or security. Scores range from 1 to 7.

TABLE 2

MEAN SELECTION CRITERIA SCORES OF FOUR ITEMS IN PS2

Item	Agreement--Disagreement	Criterion Rating Scale: Effort	Guilt	Enjoyment	Challenge	Boredom
Pro Capital Punishment	1.64[a]	4.21	2.14	3.97	3.86	4.14
Pro Shooting Looters	1.64	4.21	2.57	3.86	4.50	3.86
Pro Postal Snooping	1.79	4.29	2.71	3.86	4.14	3.71
Pro Torture in War[b]	2.87	4.47	2.87	4.33	4.67	3.27

[a] Means for the first three items are based on an N of 14, while for the "torture" issue the N is 15. The higher the number, the greater the agreement, effort, guilt, enjoyment, challenge, or boredom. Scores range from 1 to 7.

[b] This item was selected for use in subsequent pilot studies. It read, "Torture, as a part of military interrogation, is justified during wartime."

TABLE 3

MEAN AGREEMENT WITH QUESTIONNAIRE ITEMS IN PS3

Questionnaire Item	Experimental Condition			
	Moral		Hedonic	
	Improvisation	Oral Reading	Improvisation	Oral Reading
Guilt	4.50[a]	2.50	4.75	2.75
Doubt	1.75	1.25	2.75	1.25
Boredom	1.50	4.00	3.00	2.00
Waste of time	2.00	2.25	2.25	3.00
Challenge	6.25	5.00	5.25	5.25
"Torture" (opinion)	3.25	1.00	3.00	1.75
Scientific value	4.50	4.50	4.00	4.75

[a] All means are based on an N of 4. The higher the score, the greater the agreement with the item. Scores range from 1 to 7.

TABLE 4

MEAN AGREEMENT WITH QUESTIONNAIRE ITEMS IN PS4

Type of Measure	Questionnaire Item	Experimental Condition[a]			
		Moral		Hedonic	
		Improvisation	Oral Reading	Improvisation	Oral Reading
Manipulation Check	Relative Content Orientation	3.67[b]	--	4.22	2.37
	Absolute Content Orientation	3.89	--	3.44	2.62
	Absolute Performance Orientation	4.00	--	4.44	5.12
Arousal	Guilt	3.67	--	3.56	2.87
	Doubt	2.89	--	2.33	1.62
	Boredom	2.33	--	3.22	3.00
	Waste of Time	3.00	--	3.33	3.37
	Challenge	5.11	--	2.78	2.62
Resolution	"Torture" (opinion)	2.78	--	2.56	3.62
	Scientific Value	4.00	--	3.22	3.37
	Personal Value	4.89	--	3.67	3.37

[a] Means for the various conditions are as follows: Moral Improvisation (9); Hedonic Improvisation (9); Hedonic Oral Reading (8).

[b] The higher the score, the greater the specified orientation or agreement with the item. Scores range from 1 to 7.

TABLE 5

MEAN AGREEMENT WITH QUESTIONNAIRE ITEMS IN PS5

Type of Measure	Questionnaire Item	Experimental Condition			
		Moral		Hedonic	
		Improvisation	Oral Reading	Improvisation	Oral Reading
Manipulation Check	Relative Content Orientation	3.50[a]	--	4.00	--
	Absolute Content Orientation	4.00	--	3.50	--
	Absolute Performance Orientation	5.50	--	4.17	--
Arousal	Guilt	2.83	--	3.33	--
	Doubt	1.67	--	2.67	--
	Boredom	2.83	--	3.00	--
	Waste of Time	3.00	--	2.17	--
	Challenge	3.17	--	3.83	--
Resolution	"Torture" (opinion)	2.83	--	3.83	--
	Scientific Value	3.17	--	3.50	--
	Personal Value	4.00	--	4.33	--

[a] All means are based on an N of 6. The higher the score, the greater the specified orientation or agreement with the item. Scores range from 1 to 7.

TABLE 6

MEAN AGREEMENT WITH QUESTIONNAIRE ITEMS IN PS6

Type of Measure	Questionnaire Item	Experimental Condition[a]			
		Moral		Hedonic	
		Improvisation	Oral Reading	Improvisation	Oral Reading
Manipulation Check	Relative Content Orientation	3.44[b]	3.00	4.10	--
	Absolute Content Orientation	3.22	3.12	3.50	--
	Absolute Performance Orientation	4.56	5.62	4.00	--
Arousal	Guilt	3.00	2.50	3.90	--
	Doubt	3.00	2.37	3.40	--
	Boredom	2.44	2.37	2.10	--
	Waste of Time	2.22	3.25	1.80	--
	Challenge	4.56	4.12	4.00	--
Resolution	"Torture" (opinion)	3.11	3.25	3.70	--
	Scientific Value	4.00	5.00	4.60	--
	Personal Value	4.44	4.50	5.20	--

[a] Means for the various conditions are as follows: Moral Improvisation (9); Moral Oral Reading (8); Hedonic Improvisation (10).

[b] The higher the score, the greater the specified orientation or agreement with the item. Scores range from 1 to 7.

TABLE 7

MEAN AGREEMENT WITH QUESTIONNAIRE ITEMS IN PS8

Type of Measure	Questionnaire Item	Experimental Condition			
		Moral		Hedonic	
		Improvisation	Oral Reading	Improvisation	Oral Reading
Arousal	Guilt	1.67[a]	2.67	2.00	3.00
	Doubt	3.33	2.17	2.83	1.83
	Hedonic Arousal	3.45	4.43	4.52	4.13
Resolution	"Landlord" (opinion)	2.83	2.00	2.00	1.67
	Scientific Value	4.67	3.50	4.17	4.67
	Personal Value	4.50	4.33	3.50	4.33
	Performance Evaluation	4.21	3.83	4.05	4.41

[a] All means are based on an N of 6. The higher the score, the greater the agreement with the item. Scores range from 1 to 7.