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THE UNIVERSITY OF ALBERTA

SOME DETERMINANTS OF TOLERANCE FOR INCONSISTENCY

by

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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

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EDMONTON, ALBERTA

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FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Some Determinants of Tolerance for Inconsistency" submitted by Elizabeth Fox Percival in partial fulfilment of the requirements for the degree of Doctor of Philosophy.

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Supervisor

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Date July 31, 1970.

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ABSTRACT

Three studies were conducted to test the effects of familiarity, the definition of consistency-inconsistency, instrumentality, and cognitive structure on tolerance for inconsistency. Ss made a decision about the probable success of one of two professors, were given an opportunity to select and read additional information which was either consistent or inconsistent, and made a second decision recommending one of the professors for tenure.

Study I ($n = 12$) yielded an effect for familiarity. Ss read more new information than old information ($p < .001$). Whether the new information was consistent or inconsistent made no difference.

In Study II ($n = 40$) the definition of consistency, positive information about the chosen alternative (+C) or negative information about the unchosen alternative (-U), and the definition of inconsistency, negative information about the chosen alternative (-C) or positive information about the unchosen alternative (+U) were varied in a factorial design. There was a consistency main effect for (1) the number of consistent cards read: Ss for whom consistency was defined as +C read more consistent cards than those for whom it was -U ($p < .01$), (2) ratings of the interest for the inconsistent information: +C condition Ss rated it as more interesting ($p < .05$), and (3) confidence on the second decision: those in +C conditions were more confident ($p < .01$). There was a significant interaction for

(1) combined ratings of interest and usefulness of the inconsistent information ($p < .05$), (2) confidence on the second choice ($p < .01$), and (3) the amount of change from first to second choice ($p < .05$). In each case the most differentiating condition was that in which Ss had only negative information available (-U or -C). They rated the inconsistent information as less interesting and useful, changed more, and were least confident of their second decision.

Study III ($n = 40$) yielded few significant effects for cognitive structure (concrete-abstract) or instrumentality.

A number of subsidiary expectations were examined. Ss' stated preferences for information and their actual reading behavior were significantly related in all studies. Ss who indicated a preference for consistent information read more consistent information than inconsistent information. Contrary to dissonance theory predictions, there was no significant relationship between confidence on the first decision and tolerance for inconsistency. There was a significant correlation between the amount of inconsistent information read and the amount of decision change in Studies II and III.

It was concluded that familiarity is a potent determinant of information selection. The definition of consistency-inconsistency was also important and was discussed in terms of relevance and positivity. This research yielded little information on the effects of cognitive structure and instrumentality on tolerance for inconsistency.

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INTRODUCTION

The area of attitude change has been dominated by various consistency theories (e.g. Festinger, Osgood, Rosenberg & Abelson). Although the motivational basis for consistency frequently has been left unspecified, a commonly held assumption has been that there is some need to seek and maintain cognitive consistency, though it need not be specified as a unitary drive (Tannenbaum, 1968). The approach has assumed that people need consistency and somehow work to avoid or reduce cognitive inconsistency; given inconsistency, people seem to reduce it. Opposed to this notion of some sort of consistency motivation have been notions of epistemic behavior, curiosity motives, and exploratory behavior (Berlyne, 1960; Fiske & Maddi, 1961; Fowler, 1965). These latter approaches have stressed a need for novelty, new stimulation, and variety which may induce inconsistency. Recently the relationship between these approaches has gained increasing interest (McGuire, 1966; McGuire, 1968; Tannenbaum, 1968). "Rather than a continuing debate about the general validity of consistency theory, we hope for a situational analysis . . . to tease out variables that will better delimit the proper sphere of applicability of consistency theory and help place the fundamental postulates of this theory into their proper place among the principles of behavior (McGuire, 1966, p. 26)." The problem has not been one of choosing

which source of motivation is really correct, but rather one of defining the limiting characteristics of each, as well as their interrelationships. There has been evidence that man sometimes seeks consistency and sometimes seeks novelty (which may yield at least temporary inconsistency). The question has been when does he do one rather than the other; what are the situational determinants and personality correlates of consistency vs. novelty seeking behaviors? The purpose of this research was to assess some of the personality and situational determinants of tolerance for inconsistency. Specifically, the effects of cognitive structure, instrumentality, familiarity, and the nature of the consistency-inconsistency on information seeking were examined.

There were many possible approaches to answering the question of the determinants of consistency vs. novelty seeking behavior. The approach used in this study stemmed directly from consistency theory involving the tolerance for inconsistency.[1] Given that the inconsistency is perceived, then obviously the higher the tolerance for inconsistency, the less consistency seeking and maintaining behavior will be evidenced (and thus the more probable

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[1] Inconsistency was used in a general sense. It may involve two cognitive elements which do not follow from one another, it may be a disconfirmation of expectancies, or it may be a discrepancy between one's behavior and one's self-concept. These definitions are obviously not mutually exclusive.

the epistemic behavior). The level of tolerance seems to be a crucial and a limiting parameter for consistency motivation. To the extent that tolerance for inconsistency is generated, a person may be motivated by curiosity, exploration, or whatever; but to the extent that intolerance for inconsistency is enhanced, he may be primarily motivated by a need for consistency.

Numerous factors could affect one's tolerance for inconsistency. Personality factors which might produce a low level of tolerance include dogmatism, authoritarianism, defensiveness, low self-esteem or self-confidence, and concrete thinking. The polar opposites of these factors might produce a high level of tolerance (e.g. low dogmatism, authoritarianism and defensiveness, high self-esteem or self-confidence, and abstract thinking). Situational determinants which might produce a low level of tolerance include high dissonance, high involvement in the issue, and overstimulation. Again, the polar opposites of these might produce a high tolerance (low dissonance, low involvement, and understimulation or boredom). Another situational factor which might produce a high tolerance for inconsistency is instrumentality, which implies that if the inconsistency is somehow useful for attaining a goal, it might be at least temporarily tolerated.

Tolerance for Inconsistency Measures

There were several possible ways of tapping tolerance

for inconsistency. One indirect measure was, of course, attitude change. Consistency theorists have assumed that one common source of attitude change is inconsistency; change is a reduction of inconsistency. Attitude change is, however, a very indirect, inferential approach to intolerance, in as much as a person who does not change may or may not actually be tolerating inconsistency, he might simply be denying the inconsistency or derogating the source. A similar indirect approach to tap tolerance for inconsistency was to consider a compliance-change difference. If a person is forced to comply but then shows no private change he may be exhibiting a tolerance for inconsistency (but again there could be other factors involved). A third possible approach to studying tolerance for inconsistency was information seeking; a measure of a person's tendency or willingness to confront himself with inconsistent information rather than rejecting it or avoiding it appeared to be a direct measure of his tolerance for inconsistency. Research on information selectivity has generally been inconclusive, partly because of methodological problems (Freedman & Sears, 1965; Rhine, 1967). However, the information seeking approach appeared to have considerable potential as a research paradigm.

The study of information seeking has been quite prevalent in the literature, and has been approached primarily within the dissonance theory framework. Dissonance theory (Festinger, 1957) has predicted that

people seek supportive information and avoid discrepant (nonsupportive, dissonant) information. Support for this hypothesis, however, has been equivocal at best. Freedman & Sears (1965) reviewed seventeen studies and found only five in which there was a preference for consonant information. Consequently, there have been several attempts to reformulate the information selectivity hypothesis (Brock, 1965; Feather, 1967; Festinger, 1964; Lowin, 1967). These have stressed such variables as commitment, utility, confidence, and the possibility that individual differences are relevant to information selection.

Personality Determinants

Generally personality theorists have been more concerned with the problem of tolerance for inconsistency than have theorists in social psychology. Several personality approaches have dealt at least indirectly with the problem. For example, work in the area of tolerance for ambiguity is, of course, relevant but not addressed directly to the issue of cognitive consistency and attitude change. A general trait of intolerance for ambiguity or inconsistency has been examined in terms of the authoritarian personality (Adorno, et al., 1950) and dogmatism (Rokeach, 1960). The area of impression formation is also relevant in that frequently subjects must resolve inconsistencies in traits. Bieri (1968) discussed this problem with respect to differences in cognitive complexity. The problem of resolving

trait inconsistencies, however, has more relevance for inconsistency reduction than tolerance for inconsistency (although the two are obviously related they are not synonymous - how one reduces or copes with inconsistency, once present, is a problem slightly different from whether or not he encounters the inconsistency or whether he seeks it or avoids it). Glass (1968) has reviewed the work on personality correlates of tolerance for inconsistency.

Among personality factors which might be important for tolerance for inconsistency, cognitive developmental factors may be critical. Specifically, cognitive structure as described by Harvey, Hunt & Schroder (1961) and Schroder, Driver & Streufert (1967) seemed relevant. Concrete individuals are most authoritarian, field dependent, and characterized by unilateral dependence. They have highly fixed and simple rules for categorizing stimuli, they are intolerant of ambiguity and use norms and authorities as sources to structure their environment. They tend toward categorical, black-white thinking and minimization of conflict. Abstract individuals are most complex in their thinking and have flexible schemata for categorization. They are described as autonomous (Tuckman, 1965). A concrete person is incapable of tolerating much inconsistency whereas this is not true for the more abstract person. One's level of cognitive development may provide a limiting parameter and a predisposition to some level of tolerance. A concrete person may be unable to tolerate inconsistency

because his structure is rigid and black-white. Because of his limited functioning and his tendency to minimize conflict, he may not be able to either integrate or refute new inconsistent information. Concrete people tend to be high authoritarian (Tuckman, 1965) and these people are less tolerant of ambiguity (Adorno, et al., 1950). On the other hand, abstract persons are more able to integrate or refute new inconsistent information because of their more flexible structure. They may be able to tolerate more uncertainty and vagueness (e.g. things are not necessarily "black and white" or "right and wrong"). They should be less defensive and upset by being exposed to contradictory or conflicting information, thus they should tolerate more inconsistency. Schroder, Driver & Streufert (1967) also argued that more concrete persons avoid information that does not "fit" and that they attempt to avoid conflict by distorting or excluding new stimuli. There has been some evidence for more information selectivity (preference for supportive information) among concrete subjects (Sandilands, 1969) and indirect evidence can be found in studies using dogmatism (e.g. Kleck & Wheaton, 1967).

But to view tolerance for inconsistency as strictly a personality characteristic is probably misleading. Recently social psychologists have taken an interest in the problem of situational determinants that might be important, although little research has been directed to this problem. Both McGuire (1966) and Aronson (1968) have stressed the

importance of examining situational determinants. Probably the most fruitful approach is to consider that both situational and personality determinants are important and that perhaps the interaction of these may yield the most information about a person's tolerance for inconsistency.

Situational Determinants

The simple dissonance hypothesis that subjects prefer supportive information, seek consonant and avoid dissonant information, apparently has not been sufficient. That supportiveness (consistency) alone does not have a clear-cut singular effect on information selection has been amply documented (e.g. Brehm & Cohen, 1962; Feather, 1967; Freedman & Sears, 1965; McGuire, 1968). Other variables which may be important have received varying amounts of attention.

Information may vary in numerous ways such as relevance, familiarity, predictableness, interest, utility, and consistency or inconsistency. For a study of tolerance for inconsistency or information selectivity, obviously the most important variable is consistency-inconsistency but other factors may strongly affect a subject's preference for information.

Familiarity appears to be an especially important variable in affecting selectivity. Perhaps subjects choose inconsistent information because they think it will contain more new information, things they do not know (and thus

both interest and utility might be high). Curiosity or epistemic behavior might account for information selection in this case. Festinger (1964) suggested that in fact familiarity might be important. He proposed that curiosity motivation could, perhaps, have been the important factor in some studies of information selectivity. Sears (1965) offered some evidence on subjects' preference for "new" rather than "old" information in a typical information selectivity study but he clearly told the subjects that the information was "old," so that strong demand characteristics may have been operative. Brock, Albert & Becker (1970) found an extremely large main effect for familiarity. Subjects strongly preferred new information to old. Though familiarity also interacted with commitment and utility, the potency of the main effect is undeniable.

Another important factor influencing selectivity may be utility or usefulness of the information. To the extent that inconsistent information has some instrumental value, one's level of tolerance may increase, at least temporarily, until the goal is reached. The instrumentality of information may serve to increase one's tolerance by overcoming dissonance effects. Even though inconsistent information may increase dissonance, it may be more important to obtain inconsistent information than to avoid dissonance. Inconsistent information frequently implies that the person may have erred in his choice; but, in fact, people do admit mistakes and correct them. Aronson (1968) illustrated this

by citing an example of a man who just bought an expensive house and found water in the basement. It is dissonant to know one's expensive house is not in good condition, that one did not choose well. Ignoring the water would be the best way to avoid dissonance but finding the source of the leak, while producing temporary dissonance, would be the best way to protect his house. In this case, it is instrumental to face the inconsistent information. Another case in which tolerance for inconsistency is instrumental is one in which a person must defend his decision. The most successful debater is one who knows the opposite position and can attack it. Ignoring the other side is not the most effective way to debate. It is instrumental to find out about the opposite side, to examine the inconsistent information in order to prepare counterarguments. One further example of the instrumentality of tolerating inconsistency is a case in which one must make another decision about a similar issue. If one has previously promoted some men and not others and is later looking for someone to promote to a new position, he would be better able to make the best decision if he reviewed the current pros and cons for all eligible employees, not just those he favored with promotion in the past. It is instrumental to evaluate all available persons even though this may involve tolerating inconsistency (e.g. finding out that someone who was promoted in the past is not doing well currently). Both Canon (1964) and Freedman (1965) offered

evidence that instrumentality does increase tolerance for inconsistency in a debating type situation in which inconsistent information could be useful in preparing rebuttals. Lowe & Steiner (1968) viewed their results on post-decision information preferences in terms of perceived utility. They presumed that information was more useful when decisions had consequences and were reversible. They found that Ss whose decisions had no consequences favored consonant information whereas Ss whose decisions had consequences were more inclined to seek dissonant information. They did not find the expected greater preference for consonant information when decisions were irreversible as compared to reversible decisions. Although Brock & Balloun (1967) did not find that utility was a determinant of information receptivity, Brock, Albert & Becker (1970) did report a significant main effect for utility. Subjects generally preferred useful to nonuseful information when utility was defined as information about the chosen alternative and nonuseful information was information about the unchosen alternative. This effect was modified by an interaction with familiarity, however. The preference for utility was evidence only when the information was unfamiliar, not when it was familiar.

Another important factor in information selectivity may be the exact definitions of consistency and inconsistency. Whether information is positive or negative about the chosen or unchosen alternative may be critical.

Different definitions may lead to differential responses. For example, if a person has chosen one position on a two-sided, mutually exclusive issue, then information consistent with his position may be positive information about the chosen alternative or negative information about the unchosen alternative. Similarly, information inconsistent with his choice may be negative information about the chosen alternative or positive information about the unchosen alternative. Table 1 presents the possible pairs of definitions of consistency-inconsistency.

Table 1

Definitions of Consistency-Inconsistency

	Consistent	
	Positive information about the chosen alternative	Negative information about the unchosen alternative
Inconsistent		
Negative information about the chosen alternative	* 1	2
Positive information about the unchosen alternative	3	4

* The numbers refer to the four possible pairs of consistent and inconsistent information. These pairs are called Cases.

Mills, Aronson & Robinson (1959) reported a preference

for consistent information in Case #3 above but not in Case #2. Brock, Albert & Becker (1970) also varied these definitions but they were confounded within the factor of utility as well as supportiveness so their effects could not be examined separately. This writer would predict that the most reinforcing consistent information would be positive information about the chosen alternative (Cases #1 and #3 above) and the most damaging, threatening inconsistent information would be negative information about the chosen alternative (Cases #1 and #2 above). Negative information about the unchosen alternative, while not contradictory, is not highly supportive of one's choice and positive information about the unchosen alternative, while somewhat contradictory, is not highly nonsupportive (the other alternative may be highly desirable, just not quite as desirable as the chosen alternative). The following example is intended to illustrate the differential supportive and threatening nature of information about the chosen and unchosen alternative. If a man buys a large car X instead of a small car Y, it should be more supportive to learn that large X cars are safe than to learn that small Y cars are hard to repair. Conversely, it should be more threatening to learn that large X cars tend to have low trade-in values than to learn that small Y cars are appealing to women. Thus, if the dissonance effect of a preference for consonant, supportive information following a choice does occur, it should be strongest

in Case #1 and weakest in Case #4.

The problem

The present series of studies were designed to examine tolerance for inconsistency in an information seeking paradigm and within the post-decision dissonance framework. One may tolerate inconsistency in a neutral setting (one with no decision, commitment, or involvement) but this is probably less difficult than tolerating inconsistency when it may, in fact, increase dissonance. Dissonance theory predicts a preference for consistent information unless the level of dissonance is extremely low or excessively high.. Tolerance for inconsistency thus works against dissonance effects and should be especially difficult under a post-decision condition. It is a case of two possibly competing motives, one to maintain consistency and the other one of curiosity, exploration or whatever.

Factors varied in these experiments were instrumentality, cognitive structure, the definitions of consistency-inconsistency, and familiarity with the information. The paradigm was a modification of the typical information selectivity paradigm (e.g. Canon's, 1964). General predictions for the effects of these factors on tolerance for inconsistency were: (1) Instrumentality should help to overcome dissonance effects and enhance one's level of tolerance; if the inconsistent information is useful for attaining a goal, one should be more willing to expose

himself to it. (2) Cognitive structure should affect one's level of tolerance in that it may provide a predisposition for some level of tolerance. Concrete subjects (whose structure is rigid and limited) should have a lower tolerance level than abstract subjects (whose structure is broader and more flexible). (3) The nature of the definitions of consistency-inconsistency may affect one's tolerance for inconsistency. For example, if the inconsistent information clearly opposes one's own position it may be much harder to tolerate than if it simply supports the opposite position. (4) Subjects' familiarity with information may serve to increase their tolerance for inconsistency. For example, if subjects perceive that some of the information available to them is "old" information, they may exhibit a preference for inconsistent information; the "old" information would probably be interpreted as consistent with their position but since it offers nothing new they might select the "new" information, even if it were inconsistent.

In addition, the particular paradigm used may lead to differential results. The conclusions drawn about tolerance for inconsistency may differ simply as a function of the nature of the dependent variable measurement (i.e. differences or significant effects could be artifactual). Studies of information selectivity typically have used preference rankings as indicators of preference for consistency or inconsistency. (One notable exception is

Brock, Albert & Becker, 1970). Such measures are extremely limited. In more usual cases, as in non-experimental settings, people usually read information, not just rank what they would prefer to read. Therefore, allowing subjects to read various kinds of information may be more interesting and more realistic than simply measuring their preferences. It is possible that subjects may state a preference for inconsistent information in an attempt to be "broadminded," in response to perceived demand characteristics, or for any number of reasons. It is also possible, however, that these stated preferences need not be highly correlated with actual behavior. A subject might express his willingness to read inconsistent information, but then, if given the information, be bothered by it. He might indicate a tolerance for inconsistency by preference ranking, but then not exhibit this tolerance. If he has an opportunity to read consistent information, he might prefer it because his tolerance might quickly dissipate. Thus in this research a paradigm was used which allowed actual reading behavior to follow simple preference rankings.

Although all of the variables were of interest because they should affect one's tolerance for inconsistency, they were not readily incorporated into the design of one study. Thus, three studies were designed to examine the effects of the variables of interest.

The basic paradigm required subjects to make a

decision, select and read additional information about the problem, and make another decision. Subjects read descriptions of two professors and then indicated which one was most likely to succeed. They were then presented with two stacks of cards containing additional information about one or both professors (the specific nature of this information varied with the studies but generally one stack contained consistent information and the other contained inconsistent information). After reading two cards from each stack they indicated which stack they would prefer to read; they were then actually allowed to read from both stacks, the only requirement being that they read only a total of nine cards. Following this they recommended one of the two professors for tenure.

The specific hypotheses and variables for each study are discussed in subsequent, separate sections. However, in addition to the variables of interest in each study, several factors were examined for all studies: (1) The relationship between one's stated preference for consistent or inconsistent information and the actual reading behavior for which a positive but not necessarily extremely high correlation was predicted; (2) The relationship between confidence on the initial decision and one's level of tolerance for which a positive correlation was predicted; (3) The relationship between the amount of inconsistent information read and the amount of decision change for which a positive correlation was predicted; and (4)

Ratings of interest and usefulness of the information were examined.

STUDY I: FAMILIARITY[2]

The hypothesis was that subjects would generally prefer new information to old, familiar information, but perhaps less so when the new information was inconsistent. In this study subjects were allowed to choose between new and old information following one decision and preceding the final decision. The new information was either consistent or inconsistent. An old inconsistent information condition was not included because subjects who are familiar with the material presumably would interpret it as more or less consistent with their decision.

METHOD

Subjects

The Ss were 12 male Introductory Psychology students at the University of Alberta. Students in the course participated in experiments for partial fulfilment of the course requirements.

Materials

Materials included brief descriptions of two professors (Appendix B), first choice and confidence ratings (Appendix C), the information (Appendix E), final choice and confidence ratings (Appendix H), and

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[2] This study was part of the pilot data. See Appendix A for a complete summary of the pilot work.

postexperimental questions (Appendix I).

Procedure

The S was brought into the experimental room and seated at a table. He was read the following general instructions:

> What we are interested in is how people make decisions. We want to know not only what decisions people make but what information they utilize in making their decisions. We are studying decision making because we want to find out what makes good decision makers. It is extremely important for people in situations such as you are about to face to make the best decisions, they cannot afford to make mistakes. We have a real situation within the university setting and we're asking people to make decisions about it.
>
> I'm going to give you a description of two university professors. Both of them were recently hired by one of the departments on campus. The department wants to know which of these two men is likely to succeed. Both of them will be kept for a couple of years on a probationary basis as is done with all new professors on campus, but it would be extremely helpful if the department could find out which of these men is likely to do well. This information is very important to the department and the people involved.
>
> Your job, then, is to read the descriptions of these two professors and decide which one is most likely to succeed. Remember, good decision makers are those who can use the information available to them to make the best decisions in any situation.

The subject was then given the descriptions of the two professors and the first choice and confidence rating sheet and told:

> Here are the descriptions; please read them carefully because I won't be able to give this

sheet back to you. Take your time in deciding which professor is most likely to succeed since this is an important decision. When you have decided then answer the questions on the next page.

When the S had completed this the choice sheet was taken away and two stacks of cards, labelled I and II were placed in front of him. There were two information conditions in this study. Thus the stacks contained either Old Consistent vs. New Consistent information, or, Old Consistent vs. New Inconsistent information. There were two instruction sets so the S was given either Neutral Instructions or an Inconsistency Set.

Neutral Instructions

Which one did you choose? Fine, now as you know, decisions are usually not single events. Each decision has consequences and further decisions are frequently made on the basis of initial decisions. Studies of decision making typically take place at just one point in time; we want to find out more about long-term decision making.

Assume now that it is two years later and it is time for both of these professors to be evaluated for tenure. Tenure means that the faculty member is given a permanent job, that although he may leave if he wishes, the university will not fire him under ordinary circumstances. It is the university's method of assuring security to its faculty. Assume also that it is your job to recommend one of these same two men for tenure.

Inconsistency Set (exactly the same as Neutral Instructions except for the addition of the following paragraph at the end)

Good decision makers not only make the best decisions but are able to defend their decisions well. When you have made your decision about tenure you will be asked to defend your choice. You will encounter arguments from others who have

made the opposite choice and you will be expected to defend your decision against these counter-arguments.

In both conditions the instructions were then continued as follows:

> We are interested in the way people utilize available information to make decisions. You have already read the descriptions of the two professors but we want to make available to you some additional information before you make your recommendation about tenure.
> In front of you are two stacks of cards. The stacks contain different kinds of information. First I want you to see what the information available to you is like. Please turn over and read the first card in Stack I ... now the first card in Stack II ... and the second card in each stack.

The S read two cards from each stack and was told:

> Now you know something about the nature of the information. You are going to be able to read nine more cards but only from one stack. Would you please write down on the paper in front of you which stack you would prefer to read... Fine, oh, no. I made a mistake. That is a different condition. You are not supposed to have to do that. Well that's okay, you didn't really do it so we can just switch. I'll throw that away and get you the proper sheet ... (the S was then given a sheet with numbers from 1 to 9 for him to scratch off as he read the cards) ... Now, as I said, you are going to be able to read nine more cards but you can select them from either stack. You may take the top card off either stack nine times. Each time, select one card, read it carefully, scratch off the next number to keep track of the number of cards you have read, and select the next card. Do this nine times. Read each card carefully as you may read them only once. When you are finished, let me know.

After the S selected and read nine cards he was asked to decide which professor most deserved tenure. He indicated his choice and his confidence in that choice and was then asked to complete the postexperimental questions. Following that he was debriefed, given his credit, and dismissed.

RESULTS

The data provided a test of the effects of familiarity: in each case the S had to choose between old and new information (either consistent or inconsistent). Twelve Ss were run, four in each condition. The two instruction sets (Neutral and Inconsistency) and the two information conditions (Old Consistent vs. New Consistent, OC-NC, and Old Consistent vs. New Inconsistent, OC-NI) yielded three conditions. It was not meaningful to include a condition with Inconsistency instructions and OC-NC information. Major analyses were done primarily on all 12 Ss to compare the effects of old vs. new information. The instruction sets were not relevant to the hypotheses of this study, and hence were not examined.

First Choice and Confidence

To check on the possibility of between group differences prior to the experimental manipulations, analyses of variance were done on Ss' first choice (scored 1-8) and their confidence in that choice (scored 1-9). As expected, there were no significant differences.

Appendix L, Tables 1 and 2 contain summaries of the analyses of variance.

Stack Chosen

A chi-square yielded no significant differences between groups for the stack chosen (either new or old). Nor was there any significant preference for new or old information overall. Eight Ss chose the new stack while 4 Ss chose the old stack. Appendix L, Table 6 presents the frequency data.

Cards Read

There were no significant differences between conditions in the number of cards read from the two stacks but there was a significant overall difference between the number of new and old cards read. Summed over all Ss and all conditions there were 108 choices (108 cards read), of these 36 were old information, 72 were new information (see Table 2). Thus only one-third of the

Table 2

Information Selection: Number of Cards Read

	Cards Read	
	OLD	NEW
Condition		
Neutral, OC-NC	11	25
Neutral, OC-NI	11	25
Inconsistency, OC-NI	14	22
Total	36	72

choices were for old information which is a significant

deviation from a chance selection of 50% at the .001 confidence level ($\chi^2 = 12.0$, df = 1). Table 2 shows that the preference for new information was no stronger when the alternative available was consistent information than when it was inconsistent.

Second Choice and Confidence

There were no significant between group differences on the second choice or ratings of confidence for this choice. Appendix L, Tables 3 and 4 present summaries of these analyses.

Change

An analysis of decision change scores (differences between first and second choice) yielded a significant effect for the information conditions ($F = 5.808$, df = 2/9, $p < .05$). Appendix L, Table 5 presents a summary of this analysis. The means for the analysis are shown in Table 3. When all of the information was consistent, there was

Table 3

Mean Decision Change Scores

Condition	Mean Change
Neutral, OC-NC	+0.25
Neutral, OC-NI	-2.00
Inconsistency, OC-NI	-3.25

essentially no change either toward or away from the initial choice whereas when Ss were exposed to inconsistent infor-

mation, there was considerable change away from the initial choice.

Additional Findings

There was a significant relationship between the stack chosen and the cards read. Ss who said they preferred new information did, in fact, read more new information than old information ($\chi^2 = 4.53$, df = 1, $p < .01$). See Table 4 for these data.

Table 4

Relationship of Stack Chosen and Cards Read

Frequency Data

	Stack Chosen	
	OLD	NEW
Ss who read 5 or more old cards	2	0
Ss who read 4 or fewer old cards	2	8

Correlations among other variables were not significant. There was no tendency for more decision change to occur when Ss read more inconsistent information ($r = .042$, $n = 8$). Confidence on the first choice was not significantly related to the number of inconsistent cards read ($r = .663$, $n = 8$). And confidence on the second choice was not significantly related to change ($r = .37$, $n = 12$). It should be noted, however, that the n's for these

correlations were extremely small.

DISCUSSION

This study demonstrated the potency of familiarity as a determinant of tolerance for inconsistency. When subjects were confronted with familiar material they preferred whatever alternative new information was available, whether it was supportive or non-supportive information. Epistemic behavior appears to be more important than consistency motivation under these conditions. The reasons for this are no doubt numerous. Subjects may be bored with the familiar material, they may interpret the situation as demanding that they not simply go over what they should know already, they may expect new information to give them some support even when it appears to be predominantly non-supportive, or new information may simply be high in utility whereas old information is not. It is impossible to say, on the basis of this study, why Ss preferred new information. These data, however, are consistent with findings by Brock, Albert & Becker (1970) and Sears (1965). The sum of the evidence is fairly decisive.

Old information was quite clearly not appealing to subjects. Of all information choices only one-third were choices of familiar information. It was expected that this difference might be especially noticeable when the alternative available was consistent information but this

was not the case. The effects of familiarity were much more potent than the effects of supportiveness in this study. It is not necessarily expected that this would occur in all cases, however. With strong commitment and involvement, Ss might possibly prefer familiar material to something nonsupportive, but the conditions would have to be more extreme than those created in this study. Even then, familiarity should be a more important variable than consistency as at least three studies have now yielded similar results on the importance of familiarity.

Furthermore, the information in this case was not simply familiar, it was entirely known. That is, it was completely old information, overlapping entirely with that contained in the initial descriptions. One might expect the familiarity effect to be less predominant in a case where the information was not totally redundant but merely partially familiar.

Subjects evidenced change in a highly predictable manner. Subjects exposed to only consistent information did not change but Ss exposed to nonsupportive information did change away from their initial choice. In the first case there was little reason to expect change as Ss read information favorable to their initial choice whether it was new or old information. It should be remembered that Ss in the second case were not only exposed to the possibility of inconsistent information, but they read predominantly inconsistent information in preference to familiar infor-

mation. Had Ss simply been exposed to the possibility of nonsupportive information but not chosen to read much of it, less change would be expected to occur.

STUDY II: DEFINITIONS OF CONSISTENCY-INCONSISTENCY

The hypotheses were that dissonance effects (selectivity of supportive information) would be strongest when consistency was defined as positive information about the chosen alternative and inconsistency was negative information about the chosen alternative, and the effects would be weakest when the information was about the unchosen alternative. In this study subjects were allowed to choose between consistent and inconsistency information. The nature of the consistency-inconsistency was varied according to the different possible definitions presented in Table 1, page 12.

METHOD

Subjects

The Ss were 41 male Introductory Psychology students who participated to partially fulfill course requirements.

Materials

Materials included brief descriptions of the two professors (Appendix B), first choice and confidence ratings (Appendix C), the information (Appendix F), stack chosen and ratings of interest and usefulness of the information (Appendix D), final choice and confidence ratings (Appendix H), and postexperimental questions (Appendix I).

Procedure

The Ss was brought into the experimental room, seated at a table, and read the following instructions:

> What we are interested in is how people make decisions. We want to know not only what decisions people make but what information they utilize in making their decisions. We are studying decision making because we want to find out what makes good decision makers. It is extremely important for people in situations such as you are about to face to make the best decisions, they cannot afford to make mistakes. We have a real situation within the university setting and we're asking people to make decisions about it.
>
> I'm going to give you a description of two university professors. Both of them were recently hired by one of the departments on campus. The department wants to know which of these two men is likely to succeed. Both of them will be kept for a couple of years on a probationary basis as is done with all new professors on campus, but it would be extremely helpful if the department could find out which of these men is likely to do well. This information is very important to the department and the people involved.
>
> Your job then, is to read the descriptions of these two professors and decide which one is most likely to succeed. Remember, good decision makers are those who can use the information available to them to make the best decisions in any situation.

He was then given the descriptions and the first choice and confidence rating sheet and told:

> Here are the descriptions; please read them carefully because I won't be able to give this sheet back to you. Take your time in deciding which professor is most likely to succeed since this is an important decision. When you have decided then answer the questions on the next page.

When the S had completed this the descriptions were taken away, he was asked which one he had selected, and asked to record three reasons for his choice in an attempt

to increase commitment.

Two stacks of cards labelled I and II were then placed in front of the S. There were four information conditions in this study. The stacks were always Consistent vs. Inconsistent information but varied as to whether they contained: (1) positive information about the chosen alternative ns. negative information about the chosen alternative, (2) negative information about the unchosen alternative vs. negative information about the chosen alternative, (3) positive information about the chosen alternative vs. positive information about the unchosen alternative, or, (4) negative information about the unchosen alternative vs. positive information about the unchosen alternative. There was only one instruction set in this study so all Ss were given the following instructions, designed to enhance dissonance by stressing the importance of the decision and leading Ss to expect that they would have to defend their decision in writing.

> As you know, decisions are usually not single events. Studies of decision making typically take place at one point in time. We'd like to try to find out more about long-term decision making.
>
> So assume now that it's two years later and it is time for both of these professors to be evaluated for tenure. Tenure means that the faculty member is given a permanent job, that although he may leave if he wishes, the university will not fire him under ordinary circumstances. It is the university's method of assuring security to its faculty. Assume also that is is your job to recommend one of these same two men for tenure.
>
> Good decision makers not only make the best decisions but are able to defend them well. After

you have made your decision about tenure, you will be asked to write a presentation of your point of view concerning the decision and to explain why you made the decision you made. Your task is to develop a forceful presentation of your case, giving your reasons.

Before you make your decision about tenure we want you to have some more information. You have already read the descriptions of the two professors but we want to make available to you some additional information before you make your decision about tenure.

In front of you are two stacks of cards. The stacks contain different kinds of information and first I want you to see the nature of the information available to you. Would you please turn over and read the first card in Stack I ... and the first card in Stack II ... and the second card in each stack.

The S read two cards from each stack and was told:

Now you know something about the nature of the information available to you. You are going to be able to read nine more cards before making your decision about tenure, but only from one stack. So I'd like you to indicate on this sheet which stack you would prefer to read and answer these questions.

The S was given the stack chosen and ratings of interest and usefulness sheet to respond to. The E then said:

Fine ... oh, no. I made a mistake, you're not supposed to have to do that. That's a different condition. But since you didn't actually do it I can just throw this away and we can go on. Here is the sheet you are supposed to have. (The S was given a paper with numbers from 1 to 9 for him to scratch off as he read the cards).

Now, as I said, you are going to be able to read nine more cards but you may select them from either stack, not just one stack. Select the top card off either stack, read it carefully,

scratch out the next number on the sheet so you'll know how many cards you have read. Do this nine times, each time taking the top card off whichever stack you prefer. Read the cards carefully because you will only be able to read them once. Let me know when you are through.

After the S selected and read nine cards he was asked to decide which professor most deserved tenure. He indicated his choice and confidence and was then asked to complete the postexperimental questions. Following this he was debriefed, given his credit, and dismissed.

RESULTS

These data provided a test of the effects of the specific nature of the consistency and inconsistency. Forty-one Ss were run in this study, 40 of whom were included in the data analysis. One S was eliminated because he failed to follow the instructions correctly. Two definitions of consistency (positive information about the chosen alternative, +C, and negative information about the unchosen alternative, -U) and two definitions of inconsistency (negative information about the chosen alternative, -C, and positive information about the unchosen alternative, +U) were varied, yielding four conditions with 10 Ss per cell.

First Choice and Confidence

To check on the possibility of between group differences prior to the experimental manipulations, 2 x 2

analyses of variance were done on first choice and confidence scores. As expected, there were no significant effects in these analyses. A summary of these analyses is presented in Appendix M, Tables 1 and 2.

Stack Chosen

A chi-square on the stack chosen (consistent or inconsistent) was not significant. In all conditions 4 of the 10 Ss selected the consistent stack except in the case where all of the information was about the unchosen alternative when 7 of the 10 Ss chose the consistent stack.

Ratings of Interest and Usefulness

2 x 2 analyses of variance on the ratings of the interest and usefulness of the consistent stack (each on a 9 point scale) yielded no significant results, nor did an analysis of usefulness of the inconsistent stack. Appendix M, Tables 3, 4 and 5 present summaries of these analyses. An analysis of the ratings of the interest of the inconsistent stack, however, did produce a significant main effect for consistency. With higher scores indicating more interest, those for whom the consistent stack was defined as +C rated the inconsistent stack as more interesting than those for whom consistency was defined as -U, with means of 7.1 and 6.0, respectively ($F = 4.624$, $df = 1/36$, $p < .05$). A summary of this analysis is presented in Appendix M, Table 6. No other effects in this analysis were significant.

Combined ratings (interest + usefulness for each stack) for the consistent stack produced no significant differences. An analysis of the combined ratings for the inconsistent stack, however, yielded a significant interaction effect ($F = 5.66$, $df = 1/36$, $p < .05$), Table 5 presents the means for this effect. When the information

Table 5

Mean Ratings of Interest + Usefulness of the Inconsistent Stack

		Consistency		
		+C	-U	Total
Inconsistency	-C	13.3	14.1	13.7
	+U	14.2	10.2	12.2
	Total	13.75	12.15	

available was only about the unchosen alternative, the inconsistent stack was rated as being much less interesting and useful than in the other conditions No other effects in this analysis were significant. Analyses of differences between ratings (interest of consistent stack - interest of the inconsistent stack, and usefulness of the consistent stack - usefulness of the inconsistent stack) also produced no significant differences. Summaries of all of these analyses of combined ratings are presented in Appendix M, Tables 7, 8, 9 and 10.

Cards Read

A 2 x 2 factorial analysis of variance on the number of consistent cards read produced one significant main effect (see Table 6 for a summary of the analysis).

Table 6

Summary of the Analysis of Variance of the Consistent Cards Read

SOURCE	SS	df	MS	F
A (consistency)	15.625	1	15.625	7.695**
B (inconsistency	.225	1	.225	-
A x B	2.025	1	2.025	-
Error	73.100	36	2.031	
TOTAL	90.975	39		

** $p < .01$

There was a consistency main effect ($F = 7.695$, $df = 1/36$, $p < .01$) with more consistent cards read (mean = 5.40) when consistency was defined as +C than when it was defined as -U (mean = 4.15). This finding confirms the prediction that positive information about the chosen alternative is more reinforcing than negative information about the unchosen alternative, thus producing more of a dissonance effect in these conditions. However, the definition of inconsistency did not produce the expected

effect of a greater preference for consistent information when the inconsistent information was defined as -C than when it was +U. It had been assumed that negative information about the chosen alternative would be more threatening than positive information about the unchosen alternative. Table 7 presents the means for this analysis.

Table 7

Mean Number of Consistent Cards Read

		Consistency		
		+C	-U	Total
Inconsistency	-C	5.7	4.0	4.85
	+U	5.1	4.3	4.7
	Total	5.4	4.15	

Second Choice and Confidence

As expected the results of a 2 x 2 analysis of variance indicated that there were no significant differences on the second choice (see Appendix M, Table 11 for a summary of the analysis) but an analysis of confidence on this choice produced two significant effects. (Table 8 presents a summary of the analysis). There was a significant consistency main effect ($F = 7.729$, $df = 1/36$, $p < .01$). When consistency was defined as +C, Ss were more confident of their second choice (with a mean of 6.85 on a 9 point scale) than when it was defined as -U (with a

Table 8

Summary of the Analysis of Variance

of Confidence in the Second Decision

SOURCE	SS	df	MS	F
A (consistency)	28.9	1	28.9	7.729**
B (inconsistency)	3.6	1	3.6	-
A x B	16.9	1	16.9	4.520*
Error	134.6	36	3.739	
TOTAL	184.0	39		

** $p < .01$, * $p < .05$

mean of 5.15). The interaction was also significant ($F = 4.520$, $df = 1/36$, $p < .05$) such that Ss were most confident when all of the information was about the chosen alternative and least confident when all of the information was negative. Table 9 presents the means for these effects.

Table 9

Mean Confidence Ratings for the Second Decision

		Consistency		
		+C	-U	Total
Inconsistency	-C	7.2	4.2	5.7
	+U	6.5	6.1	6.3
	Total	6.85	5.15	

Change

Change from first to second choice was defined with positive change being movement toward a more extreme position on the initial choice, negative change being change away from the initial position. The total change possible was thus +3 to -7. An analysis of variance on change scores yielded a significant interaction ($F = 15.7197$, $df = 1/36$, $p < .01$). A summary of this analysis is presented in Appendix M, Table 12. The most change occurred when all of the information available was negative, the least change occurred when all of the information available was about the chosen alternative. These data provided an exact parallel to the confidence findings. See Table 10 for the mean change scores. No other effects in this analysis were significant.

Table 10

Mean Decision Change Scores

		Consistency		
		+C	-U	Total
Inconsistency	-C	-0.3	-2.7	-1.5
	+U	-1.8	-0.6	-1.2
	Total	-1.05	-1.65	

A chi-square on the number of reversals (a reversal indicated that the S changed his choice from A to B or

vice versa) yielded similar significant results ($\chi^2 = 11.2$, df = 3, $p < .02$). No reversals occurred when all of the information was about the chosen alternative, the most reversals occurred when all of the information available was negative (see Table 11 for these data).

Table 11

Frequency Data for Reversals

Consistency	+C		-U	
Inconsistency	-C	+U	-C	+U
Reversal	0	3	6	1
No Reversal	10	7	4	9

Additional Findings

A chi-square on the relationship between what Ss said they preferred to read and what they actually read yielded highly significant results ($\chi^2 = 11.49$, df = 1, $p < .01$). See Table 12 for the exact relationship between the stack chosen and the cards read.

A correlation between the number of consistent cards read and the amount of decision change was also significant ($r = .37$, $n = 40$, $p < .05$). The more consistent cards read, the more change toward the initial position. Other correlations computed were not significant; there was no relationship between confidence on the first choice and

Table 12

Relationship of Stack Chosen and Cards Read

Frequency Data

	Stack Chosen	
	Consistent	Inconsistent
Ss who read 5 or more consistent cards	16	7
Ss who read 4 or fewer consistent cards	3	14

the consistent cards read (r = -.087) or between confidence on the second choice and the amount of change (r = .210).

DISCUSSION

This study emphasized the importance of the definitions of consistency and inconsistency. Subjects demonstrated most selective exposure when the information was about the chosen alternative and least when the information was entirely negative about both the chosen and unchosen alternative. There was a significant consistency main effect in that Ss read more consistent information when consistency was defined as positive information about the chosen alternative than when it was negative information about the unchosen alternative. Both the positive-negative nature of the information and the object of the information (chosen or unchosen alternative) were apparently important. Once again there was no evidence of a

simple effect for supportiveness; Ss did not simply prefer consistent to inconsistent information. The nature of the definition of both consistency and inconsistency was important.

Although there were no significant differences in the stack chosen due to the definition of consistency-inconsistency, there were differences in actual reading behavior, and ratings of interest and usefulness, confidence, and change. There was a consistency main effect for ratings of the inconsistent stack, cards read, and confidence on the second choice. When consistent information was defined as +C (positive information about the chosen alternative), Ss rated the inconsistent stack as more interesting, read more consistent cards, and were more confident of their second choice. While the latter two findings were consistent, the first two seemed inconsistent with each other. Perhaps, as hypothesized, positive information about the chosen alternative was reinforcing to the subject. Perhaps also seeing this information raised his confidence so that he was willing to rate the other stack as fairly interesting. However, when he actually started reading the information, he preferred the supportive information. The latter two findings were explicable in as much as Ss who read more consistent information gained more support and were thus more confident of their final choice (they also changed less than other groups, though not significantly so).

There was a significant interaction on the combined ratings of interest and usefulness of the inconsistent stack, confidence on the second choice, and change. The differentiating condition in each of these interactions was the one in which all of the information was negative (-U vs. -C). In this condition Ss rated the inconsistent stack as less interesting and useful, were less confident of their second choice, and changed the most. Perhaps as hypothesized, negative information about the unchosen alternative was not perceived as very reinforcing (in contrast to +C information) and negative information about the chosen alternative was quite threatening (in contrast to +U), thus Ss in this condition had the worst possible alternatives. The consistent information was not highly supportive and the inconsistent information was highly threatening. They rated the inconsistent stack as less interesting and useful, they changed more, and consequently were less confident of their final choice. One might, however, also have expected significant differences in ratings of the consistent stack and in the number of cards read. These did not occur.

The results of this study may be interpreted in terms of a positivity effect of in terms of the information's relevance to the Ss. Both explanations are elaborated in the general discussion.

It should be noted that Ss confronted somewhat different problems in the various information conditions

of this study. In two conditions all of the information was about one alternative (either chosen or unchosen) while in the other two conditions one stack was concerned with each alternative. In the first case the information was more clearly opposing (although the cards were arranged so that the information was not clearly contradictory). In the second case the conflict was less direct. The exact effects of these differences could not readily be assessed in the present study. It would have been useful to know whether Ss were specifically approaching or avoiding information. Rhine (1967) pointed out that one problem in information selectivity studies has been the impossibility of assessing whether Ss were, in fact, seeking supportive information or avoiding nonsupportive information (or the opposite). This study had no control group to provide a baseline for such an assessment. Brock, Albert & Becker's (1970) study provided interesting possibilities for a solution to this common problem.

STUDY III: COGNITIVE STRUCTURE AND INSTRUMENTALITY

The hypotheses advanced for this study were that there would be more tolerance of inconsistency under instrumentality instructions than in dissonance only conditions and that abstract subjects would tolerate inconsistency more than concrete subjects. The latter prediction was based on the cognitive theory of Harvey, Hunt & Schroder (1961) and Schroder, Driver & Streufert (1967). In this study concrete and abstract subjects were allowed to choose between consistent and inconsistent information under conditions designed to enhance dissonance only or dissonance plus an instrumentality instruction set.

METHOD

Subjects

The Ss were 49 males, of whom 25 were abstract Ss and 24 were concrete Ss, selected on the basis of the Interpersonal Topical Inventory (Tuckman, 1966; see Appendix J for a copy of the test). The Ss were Introductory Psychology students participating for partial fulfilment of course requirements.

Materials

The Interpersonal Topical Inventory is a forced choice questionnaire in which subjects endorse one of two items which best represent their feelings about several interpersonal topics. There are six leading stems

("When I am criticized...," "When I am in doubt...," "When a friend acts differently toward me...," "This I believe about people...," "Leaders...," and "When other people find fault with me...") and for each stem there are six pairs of answers. The subject chooses one of the answers in each pair for a total of 36 items. Of the Introductory Psychology students tested, there were 69 males classified as System I (concrete) and 104 classified as System IV (abstract) by the double criterion employed (see Appendix K for the scoring criteria). It was necessary to use a double criterion because the Tuckman classification procedure did not yield enough concrete Ss. Several recent studies have supported the construct validity of the test (Corfield, 1969; MacNeil & Rule, 1970; Sandilands, 1969; Tuckman, 1966).

Other materials were brief descriptions of the two professors (Appendix B), first choice and confidence ratings (Appendix C), the information (Appendix G), stack chosen and ratings of interest and usefulness (Appendix D), final choice and confidence ratings (Appendix H), and postexperimental questions (Appendix I).

Procedure

The S was brought into the experimental room, seated at a table, and read the following instructions:

> What we are interested in is how people make decisions. We want to know not only what decisions people make but what information they utilize in

making their decisions. We are studying decision making because we want to find out what makes good decision makers. It is extremely important for people in situations such as you are about to face to make the best decisions, they cannot afford to make mistakes. We have a real situation within the university setting and we're asking people to make decisions about it.

I'm going to give you a description of two university professors. Both of them were recently hired by one of the departments on campus. The department wants to know which of these two men is most likely to succeed. Both of them will be kept for a couple of years on a probationary basis as is done with all new professors on campus, but it would be extremely helpful if the department could find out which of these men is likely to do well. This information is very important to the department and the people involved.

Your job then, is to read the descriptions of these two professors and decide which one is most likely to succeed. Remember, good decision makers are those who can use the information available to them to make the best decisions in any situation.

He was then given the descriptions and the first choice and confidence rating sheet and told:

Here are the descriptions; please read them carefully because I won't be able to give this sheet back to you. Take your time in deciding which professor is most likely to succeed since this is an important decision. When you have decided then answer the questions on the next page.

When the S had completed this the descriptions were taken away, he was asked which one he had selected, and asked to write down three reasons for his choice in an attempt to increase commitment.

Two stacks of cards were then placed in front of the

S labelled I and II. The stacks contained consistent vs. inconsistent information (the same for all conditions). There were two instruction sets so Ss were given either:

Dissonance Instructions

As you know, decisions are usually not single events. Studies of decision making typically take place at just one point in time; we'd like to try to find out more about long-term decision making.

So assume now that it's two years later and it is time for both of these professors to be evaluated for tenure. Tenure means that the faculty member is given a permanent job, that although he may leave if he wishes, the university will not fire him under ordinary circumstances. It is the university's method of assuring security to its faculty. Assume also that it is your job to recommend one of these same two men for tenure.

Before you make your decision about tenure, we want you to have some more information. You have already read the descriptions of the two professors but we want to make available to you some additional information before you make your decision about tenure.

In front of you are two stacks of cards. The stacks contain different kinds of information and first I want you to see the nature of the information available to you. Would you please turn over and read the first card in Stack I ... and the first card in Stack II ... and the second card in each stack.

or,

Instrumentality Instructions.

As you know, decisions are usually not single events. Studies of decision making typically take place at just one point in time; we'd like to try to find out more about long-term decision making.

Often people have to make new decisions about similar issues. They have to evaluate new information in order to make these decisions. Each decision is a new problem to be solved.

So assume now that it's two years later and it is time for both of these professors to be evaluated for tenure. (From here the instructions proceeded exactly as above).

The S then read two cards from each stack and was told:

> Now you know something about the nature of the information available to you. You are going to be able to read nine more cards before making your decision about tenure, but only from one stack. So I'd like you to indicate on this sheet which stack you would prefer to read and answer these questions.

The S was given the stack chosen and ratings of interest and usefulness sheet to respond to. The E then said:

> Fine ... oh, no. I made a mistake, you're not supposed to have to do that. That's a different condition. But since you didn't actually do it I can just throw this away and we can go on. Here is the sheet you are supposed to have. (The S was given a paper with numbers from 1 to 9 for him to scratch off as he read the cards).
>
> Now, as I said, you are going to be able to read nine more cards but you may select them from either stack, not just one stack. Select the top card off either stack, read it carefully, scratch out the next number on the sheet so you'll know how many cards you have read. Do this nine times, each time taking the top card off whichever stack you prefer. Read the cards carefully because you will only be able to read them once. Let me know when you are through.

After the S selected and read nine cards he was asked to decide which professor most deserved tenure. He indicated his choice and confidence and was then asked to complete the post-experimental questions. Following this he was debriefed, given his credit, and dismissed.

RESULTS

These data provided a test of the effects of cognitive structure and two instructional sets. Of the 49 Ss (25

abstract Ss and 24 concrete Ss) who participated, 40 Ss (20 abstract Ss and 20 concrete Ss) were included in the data analyses. Eight Ss were eliminated because they failed to follow the instructions correctly and one because of a procedural error. Cognitive structure (concrete and abstract) and instruction sets (dissonance and instrumentality) were varied, yielding four conditions with 10 Ss per cell.

First Choice and Confidence Ratings

To check on the possibility of between group differences prior to the experimental manipulations, 2 x 2 analyses of variance were done on first choice and confidence scores. As expected, there were no significant effects in these analyses. Appendix N, Tables 1 and 2 present summaries of these analyses.

Stack Chosen

A chi-square on the stack chosen (either consistent or inconsistent) was not significant. See Table 13 for a summary of these data.

Ratings of Interest and Usefulness

2 x 2 analyses of variance for ratings of interest and usefulness of the consistent stack yielded no significant effects. Similarly, an analysis of the usefulness of the inconsistent stack yielded no significant differences. These analyses are presented in Appendix N, Tables 3, 4, and 5. There were two significant main effects in the analysis of the interest of the inconsistent stack

Table 13

Frequency Data for Stack Chosen

Number of Subjects Choosing the Consistent Stack

	Concrete	Abstract	Total
Dissonance	8	5	13
Instrumentality	5	6	11
Total	13	11	

(see Table 14 for a summary of this analysis). Concrete Ss rated the inconsistent stack as more interesting than

Table 14

Summary of the Analysis of Variance

of Interest of the Inconsistent Stack

SOURCE	SS	df	MS	F
A (concrete-abstract)	10.0	1	10.0	4.265*
B (dissonance-instrumentality)	14.4	1	14.4	6.142*
A x B	3.6	1	3.6	1.535
Error	84.4	36	2.344	
TOTAL	112.4	39		

* $p < .05$

did abstract Ss and those in dissonance conditions rated the stack as more interesting than did those in the

instrumentality conditions (see Table 15 for the means). Both of these findings were opposite to the predicted results.

Table 15

Mean Ratings of Interest of the Inconsistent Stack

	Concrete	Abstract	Total
Dissonance	7.6	7.2	7.4
Instrumentality	7.0	5.4	6.2
Total	7.3	6.3	

Analyses of combined ratings of interest and usefulness yielded no significant results (interest + usefulness for each stack) nor did difference scores yield any significant results (interest of the consistent stack - interest of the inconsistent stack, and usefulness of the consistent stack - usefulness of the inconsistent stack). Appendix N Tables 6, 7, 8, and 9 present summaries of these analyses.

Cards Read

A 2 x 2 analysis of variance of the number of consistent cards read yielded no significant differences (see Table 16 for the means). A summary of this analysis is presented in Appendix N, Table 10. One problem in this analysis was that a Bartlett's test (Edwards, 1964) was significant ($\chi^2 = 7.927$, $p < .05$) indicating heterogeneity

Table 16

Mean Number of Consistent Cards Read

	Concrete	Abstract	Total
Dissonance	4.50	4.30	4.40
Instrumentality	4.70	5.40	5.05
Total	4.60	4.85	

of variance. However, since the F-test is robust with equal n's and since the data were so far from being significant, no transformations of the data were done. (It might be noted that the main cause of the heterogeneity was concrete Ss in the instrumentality condition. They reacted rather extremely, though not consistently, to this condition and tended to produce a bi-modal distribution of scores).

Second Choice and Confidence

A 2 x 2 analysis of variance yeilded no significant differences for second choice or for confidence. Appendix N, Tables 11 and 12 present summaries of these analyses.

Change

A 2 x 2 analysis of variance on decision change scores (differences between the first and second choice) yielded no significant differences. Appendix N, Table 13 presents a summary of this analysis. A chi-square on reversals from first to second choice also failed to yield any significant findings. There were three reversals in

all conditions except for concrete Ss in the dissonance only condition where there was only one reversal.

Additional Findings

A chi-square on the relationship between what Ss said they preferred to read and what they actually read yielded highly significant results ($\chi^2 = 9.18$, df = 1, $p < .01$). See Table 17 for the exact relationship between stack chosen and cards read.

Table 17

Relationship of Stack Chosen and Cards Read

Frequency Data

	Stack Chosen	
	Consistent	Inconsistent
Ss who read 5 or more consistent cards	19	5
Ss who read 4 or fewer consistent cards	5	11

Again there was a significant correlation between the number of inconsistent cards read and the amount of change ($r = .507$, $n = 40$, $p < .01$). The more inconsistent cards read, the more change (away from the initial position). There was no significant relationship between confidence on the first choice and the number of inconsistent cards read ($r = .101$) or between confidence on the second choice and change ($r = .203$).

An analysis of the extremity of the first choice yielded one interesting effect. Since Ss not only chose one professor but indicated a degree of certaintly for his success it was possible to analyze extremity independently of choice. Using scores of 1 to 4 (4 being the most extreme, he is extremely likely to succeed, 1 being the least extreme, he is slightly likely to succeed), there was a significant main effect for cognitive structure ($F = 5.188$, $df = 1/36$, $p < .05$). Concrete Ss were more extreme in their initial choice no matter which professor they chose (with a mean of 3.00) than were abstract Ss (with a mean of 2.65). Although there were no differences in choice, either for A or B, concrete Ss simply rated their chosen alternative as more likely to succeed than did abstract Ss. A summary of this analysis is presented in Appendix N, Table 14.

DISCUSSION

This study yielded little significant data. Cognitive structure and instrumentality both failed to evidence any clear-cut effects on the information read. The lack of findings is inconsistent with other reports of utility effects (Canon, 1964, Brock, Albert & Becker, 1970) and with the theoretical predictions derived from the theory of Harvey, Hunt & Schroder (1961). The only significant effects were on a variable of lesser importance, ratings of interest of the information.

As in the case of the other studies, there were no significant differences in the stack chosen. That there were no significant effects for the cards read was more surprising and contrary to expectations. The only analyses which were significant were opposite to the predicted effects: concrete Ss rated the inconsistent stack as more interesting than did abstract Ss, and those in the dissonance-only condition rated the inconsistent stack as more interesting than did those in the instrumentality condition. There appears to be no reasonable explanation for these data. There were no significant differences in either confidence on the second choice or change scores.

The lack of significant findings for the manipulated variable of dissonance-only vs. instrumentality might be interpreted as a failure to successfully establish dissonance and/or a failure to manipulate instrumentality. Since all of the cell means for the number of consistent cards read were near 50% (Ss read almost equal numbers of consistent and inconsistent cards, see Table 16, page 54) it appeared that both failures probably occurred. An attempt was subsequently made in Study II (which was actually run following Study III) to correct the possible failure of the dissonance creation. The instructions were made more emphatic and there was an addition in that Ss were told they would have to justify and defend their final choice. Although there was no independent check on the dissonance manipulation, it appeared that it may have been successful

as the results of that study were more predictable and explicable. The change in the procedure made sense theoretically and is thus consistent with the idea that stronger dissonance was created. Ss in Study III may simply have felt little commitment to their initial choice or little involvement in the decision.

The failure of the instrumentality manipulation is less easily explained. It had appeared to be successful with a small number of pilot subjects where the results were in the predicted direction at least. And it made sense theoretically to stress the problem solving nature of the situation to try to increase the utility of the information. It was dissimilar to previous manipulations of instrumentality, however. Canon (1964) and Freedman (1965) told Ss that they would have to defend their position and make counterarguments. An attempt was made to use this manipulation in pilot work for this research and it was completely unsuccessful. Brock, Albert & Becker (1970) made information useful by relating it to the chosen alternative. Information about the chosen alternative had no particular utility for Ss in this study, however. Such an approach would not have been feasible or meaningful for this study.

That cognitive structure did not produce the predicted results was more puzzling than the failure of the manipulated variables. Here the differences should have occurred as the Harvey, Hunt & Schroder (1961) theory

quite clearly specifies that there should be a difference between concrete and abstract Ss in their ability to tolerate inconsistency. Furthermore, there has been evidence of differences in selective exposure for these two groups (Sandilands, 1969). It cannot be said that Ss did not perceive the consistent-inconsistent nature of the available information. It was quite clear from pilot data that the differences were obvious to Ss. And the Ss in this study gave reasons for their information choices which demonstrated that they perceived the differences. In fact, it was interesting to note that there were two quite clear-cut kinds of reasons given in response to being questioned about why they chose the information they did. Subjects who read more consistent than inconsistent information usually said that they wanted to learn more to support their position (e.g. an S who read eight consistent cards said, "Since I was going to argue for retaining Dr. B I picked the cards which presented him in a good light," and an S who read seven consistent cards said, "I was trying to find a way to defend my decision. Thus I picked up cards mostly in Stack I to confirm my decision. Occasionally I picked up one from Stack II out of curiosity but I tried to avoid it."). Similarly, Ss who read more inconsistent information usually said that they thought they should learn more about the opposite position (e.g. an S who read 7 inconsistent cards said, "I read more about Dr. B than Dr. A because

in my mind Dr. A had the advantage so I wanted to see what attributes Dr. B has, it would useless to see Dr. A good points (sic)," and an S who read six inconsistent cards said, "I took the majority of cards from II so I could have more information on him in the event my decision was wrong"). These differences were quite reliable but were unrelated to either the instructional manipulation or the individual difference variable.

The one interesting difference that did emerge was that concrete Ss tended to be more extreme in their initial choice. They rated either A or B as more extremely likely to succeed than did abstract Ss. This might be explained by the tendency toward black-white thinking which is supposed to be characteristic of concrete subjects. It is interesting that this difference was not accompanied by any difference in confidence.

GENERAL DISCUSSION

The present series of studies was designed to examine some variables which might influence one's tolerance for inconsistency. Although dissonance theory has generally predicted information selectivity following a decision, there has been ample empirical evidence that people do, in fact, frequently expose themselves to inconsistent information. These studies have suggested that familiarity and the definition of consistency-inconsistency affect one's level of tolerance. If one is confronted with familiar material he tends to prefer other alternatives whether they are consistent or inconsistent. When consistency is defined as positive information about one's chosen alternative, he tends to prefer consistent information (show more selective exposure) than when consistency is defined as negative information about the unchosen alternative. In the first case he is more confident of a subsequent decision, since he has read more consistent information. A subject changes his decision more when all of the information given to him is negative in nature and he is then less confident of his position.

The effects of Study I were quite clearcut. The potency of familiarity as a determinant of information seeking has been sufficiently documented. In subsequent studies of information selectivity, this factor should be either controlled or examined. It is not of great

theoretical significance that Ss prefer unfamiliar material, in fact it is intuitively obvious and not at all surprising, but it must be considered as a powerful effect. As Study III produced little significant data it is difficult to discuss it further. Some possible reasons for the lack of findings were previously discussed (see Discussion of Study III).

The effects of Study II may be best explained in terms of relevance, that is, what information is especially relevant to a subject in a given situation. When a person makes a choice it is assumed that he is committed to it and involved; information about this choice should then be especially relevant to the person. The main effects for consistency supported this notion in that Ss read more consistent cards, were more confident of their second choice, and tended to change less though not significantly so when consistency was defined as +C than when it was -U. Information about the chosen alternative was relevant to the S, he was presumably committed to his choice and involved. Hence +C information was not only supportive, but was relevant to his vested interest. The S's self-esteem may have been involved with information about his choice. On the other hand, -U information, while supportive, was not highly relevant and in no way affected the Ss self-esteem. While +C information may enhance the S's self-esteem, -U information would have little effect, if any. Recently there has been considerable interest among

consistency theorists in the role of self-esteem in attitude change (e.g. Rosenberg, 1968). These data were compatible with such an emphasis although there were no data directly relevant to the issue.

Similarly, the interaction effects on change and confidence could be viewed in terms of their relevance to the S. The two conditions primarily responsible for the significant interactions were those in which all of the information was about the chosen alternative (+C vs. -C) and those in which all of the information was negative (-U vs. -C). In the first case all of the information was relevant to the S, one stack highly supportive and one stack highly threatening. In the second case the inconsistent information was relevant but threatening and the consistent information was not highly relevant or supportive so Ss in this case changed more and were less confident of their final decision.

While an interpretation in terms of relevance fit the data quite well, there was one possible problem. One might have predicted that the case in which Ss got information only about the unchosen alternative would have been the least relevant and might thus have lead to a high level of tolerance. Ss in this condition might have been expected to read more inconsistent information and change more than in other conditions but this did not occur, Ss read little inconsistent information and changed little. Whether this significantly alters a relevance

interpretation is unclear; an explanation of what did occur in this condition is not readily apparent. A positivity effect, discussed later, also fails to account for this condition.

An explanation in terms of relevance is interesting in light of the recent Brock, Albert & Becker (1970) research. Their definition of utility was information about the chosen alternative, a notion similar to considering information about the chosen alternative as relevant to the S and information about the unchosen alternative as less relevant. In the present study there was little reason to consider information about the chosen alternative as more useful specifically but utility and relevance may have similar effects. Certainly the definitions in terms of information about the chosen or unchosen alternative are similar.

There is another possible explanation for the data of Study II which should be considered. Perhaps there was simply a positivity effect. That is, Ss may simply prefer positive information. The consistency main effects can easily be explained in terms of positivity in that Ss preferred +C to -U information. Predictions in terms of positivity lead one to expect a main effect for inconsistency also, a preference for +U rather than -C information, but there were no significant inconsistency main effects in any analyses. The significant interactions, however, can also be partially explained in terms of

positivity. Subjects changed most and were least confident in the condition where all of the information was negative (-U vs. -C). If Ss do, in fact, prefer positive information, then one would expect them to be most upset and uncertain when confronted with all negative information.

There is evidence for positivity effects in several areas. Jastrebske & Rule (1970) found more conformity when Ss encountered agreeing sources than when they encountered disagreeing sources. That is, when the pressure toward conformity was in the positive direction, Ss originally neutral on the issue changed more than when the pressure was in the negative direction. Osgood (1964) and Jakobovits (1968) discussed people's tendency to structure their world in positive rather than negative terms (good rather than bad, strong rather than weak, active rather than passive). There is also evidence that "good" words outnumber "bad" in the language (Jakobovits, 1968). Perhaps the data from this study merely document a general preference for positive rather than negative descriptions.

The design of the studies allowed for examination of several additional factors. Subjects initially selected one of the professors and rated their confidence in this choice. In no case did significant differences emerge on these measures. Nor did the selection of one professor influence any of the subsequent measures in the studies.

After being exposed to consistent and inconsistent

stacks of information, Ss indicated which one they preferred to read. In no case were there any significant differences in this measure; it appeared to be a fairly insenstive measure. In these studies Ss actually read nine more bits of information, and this measure appeared to be more sensitive. It is not surprising that a variable of several possible values is more sensitive than a simple dichotomous rating. The importance of gathering data in addition to subject's stated preferences appears obvious.

Subjects also rated the interest and usefulness of the two stacks of information presented them. In no case did ratings of the consistent stack yield significant differences (either interest, usefulness, or interest + usefulness). However, ratings of the inconsistent stack did yield some differences in both Study II and Study III. The interest of the inconsistent stack was the best measure. Ratings of usefulness alone did not yield any differences. Why the ratings of the inconsistent stack should be a better measure than ratings of the consistent stack is unclear. Ratings of the inconsistent stack were simply more sensitive in that they produced more variability; subjects may have been more sensitive to the inconsistency as they were somewhat threatened by it whereas they were more comfortable with the consistency and were thus less discriminating in their ratings of the consistent stack.

Decision change scores and the number of reversals (changes from one professor to the other from first to

second decision) also provided useful data. These data tended to parallel the cards read. Subjects who read more inconsistent information usually changed more but they were not necessarily less confident of their choice.

Some of the additional correlational data yielded significant results. It was hypothesized that there would be a significant relationship between the stack chosen and the cards read. In all three studies there was a significant relationship between these two measures. Subjects who said they preferred the consistent stack did, in fact, read more consistent cards than those who said they preferred the inconsistent stack, who read more inconsistent cards. For Study I the relationship was computed for choices of new or old information rather than consistent or inconsistent information but the relationship between preference and reading behavior was the same. That this relationship is strong and highly consistent constitutes support for those who use preference ratings as their dependent variable in studies of information selectivity. However, in no case were there any significant differences based on the preference measure while there were several significant effects for the cards read data. This constitutes an argument against the use of preference only as a dependent variable. Although it is possible to get significant differences using only a dichotomous preference measure (e.g. Brock, Albert & Becker, 1970), it is also common not to do so. For example, Canon's (1964)

only significant data were ratings of interest and usefulness, his preference rankings were not significant. Research in the area of information selectivity might be more productive if there was a concerted effort to refine the measurement of the dependent variable.

Dissonance theory predicts that there will be less information selectivity when Ss are confident of their position. These studies provided no support for this hypothesis. The correlations between confidence on the first choice and the number of inconsistent cards read failed to reach significance in all three studies. There was no evidence that Ss who were more confident of their first choice were less likely to read consistent information (i.e. were more willing to expose themselves to inconsistent information).

There was a significant relationship between the cards read and change, as expected. The correlations for Studies II and III were significant, the correlation for Study I, while in the predicted direction, failed to reach significance because of the small n. The more inconsistent information the Ss read, the more they changed away from their initial choice. It should be noted that Ss selected the information they read, they were not simply exposed to consistent or inconsistent information. This lends support to the dissonance theory notion that free choice is important (Brehm & Cohen, 1962). The Ss who chose to read more inconsistent information evidenced the most change; it was not

simply exposure to the possibility of inconsistent information that was effective in producing change.

It was expected that there would be a significant relationship between confidence on the second choice and change. This was not the case. None of the correlations were significant. Subjects who changed most were not necessarily less confident, as had been expected.

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Appendix A

Summary of Pilot Work

Pilot data were collected for 70 subjects to check on the manipulations as well as the feasibility of the paradigm.

Five cells were included in the initial pilot work to check on the instrumentality manipulation and the responses to the different kinds of information: two instruction sets, neutral and inconsistency, and three pairs of information, OC-NI, NC-NI, and OC-NC (the latter under neutral instructions only).[3] In each case there were four subjects per cell so that 20 Ss were run.

The procedure was as follows: Ss read descriptions of two university professors, they were asked to decide which one was most likely to succeed, and how confident they were of the decision. They were then told to assume it was two years later and time for the professors to be evaluated for tenure; their task was to recommend one. Before making the decision they would be able to get more information. Two stacks of cards were placed in front of them (OC-NC, OC-NI, or NC-NI). Each stack contained eleven cards. Ss read two cards from each stack and indicated which stack they preferred to read (previous pilot

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[3] The information was Old Consistent (OC), New Consistent (NC), or New Inconsistent (NI).

data indicated that Ss could discriminate between the stacks on the basis of the four cards). They were then told that they could select cards from either stack to read a total of nine cards. After reading the information Ss recommended one of the two professors for tenure and indicated their confidence in this decision. For the inconsistency set Ss were told before the information selection that they would have to defend their final decision. All information was about the unchosen alternative (old consistent = old information about the unchosen alternative, new consistent = negative information about the unchosen alternative and new inconsistent = positive information about the unchosen alternative).

Results of the initial pilot data indicated a strong preference for new information in all cases. These data are summarized in Study I. The data showed no evidence of an effective instrumentality manipulation, however. Under neutral instructions Ss actually read more inconsistent information (in the NC-NI condition) than under inconsistency instructions. The mean number of NI cards read were 4.0 and 2.75, respectively. It was concluded that the inconsistency instructions may have created dissonance and made the Ss defensive. Since both Canon and Freedman had obtained an instrumentality effect, it was decided to try their insturctions.

Additional pilot data were collected for two conditions using all NC-NI information in an attempt to improve the

instrumentality manipulation. Instruction sets were called "Reasons" and "Defense" and were taken directly from Canon (1964). In the first case Ss were told that they would have to give their reasons for their second choice, in the second case they were told that they would engage in a written debate about their second choice. This also proved ineffective; the mean number of NI cards read in Reasons and Defense were 3.25 and 3.0, respectively. Again, there was a powerful dissonance effect overriding any possible instrumentality.

Several problems were considered as interfering with the manipulation. One problem appeared to be that in the Neutral condition (of the original pilot work) there was little, if any, dissonance created. Ss were not committed to their first decision and they behaved in a fairly instrumental manner, reading cards from both stacks (getting both positive and negative information about the unchosen alternative). They were not defensive but were quite open about selecting and evaluating the new information in order to make their second decision. Instrumentality was included in the study because it appeared to be something which could overpower dissonance in some cases. Hence this Neutral condition did not provide a valid baseline for comparison. It seemed obvious that some dissonance had to be created in all conditions. In later pilot work where there was a strong dissonance effect in all conditions, it became apparent that the

instrumentality manipulation was still ineffective.

A second problem was related to the definition of instrumentality in this situation. The writer had assumed that positive information about the unchosen alternative (NI) should be instrumental for planning a defense and that Ss should at least select equal amounts of positive and negative information to prepare for the defense (it was assumed that this was the minimal level of instrumental behavior as they would need arguments to support their choice and to show that he was superior to the other alternative). The error here seemed to be in equating the stacks of information in this study with magazine articles in other studies. If one chooses to read an article favoring the unchosen alternative, he probably expects to read it critically, to find out the favoring arguments for the other side, but also to find flaws in the arguments, errors or misconceptions, etc. with which he can argue. However, the information in the stacks in this study did not allow for that possibility. The inconsistent information was simply statements of supposed fact and there was no way to effectively counter-argue just given this information. Hence, the most instrumental thing to do was probably to collect negative information about the unchosen alternative (NC) and use this to counterattack. Thus Ss who selected and read mostly NC cards were, in fact, probably doing the most instrumental thing. The problem, of course, is that this

is also what dissonance predicts they would do and it is impossible to tell why, in fact, they read that information.

It was evident that different information must be used. The alternative selected was to use positive information about the chosen alternative as consistent information (NC) and positive information about the unchosen alternative as inconsistent information (NI). For reasons already stated, it did not seem reasonable to make this NI information instrumental for a defense of the Ss' second choice. Instead it was decided to vary instrumentality by stressing a problem solving set; if the emphasis were on making the second decision a new problem to be solved, it would be instrumental to read at least equal amounts of consistent and inconsistent information. However, if dissonance were created for the first decision and there was no shift in emphasis, Ss should read mainly consistent information.

Two new instruction sets were thus created: Dissonance Only and Dissonance + Instrumentality. Dissonance was created in both conditions by having Ss record three reasons for their first choice (thus enhancing commitment).[4] Instrumentality was manipulated by stressing problem solving and the consideration of new information for each

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[4] An initial attempt at creating dissonance here was apparently unsuccessful. The importance of the first decision was stressed but this was not enough to create dissonance. Means for NI cards read in Dissonance and Dissonance + Instrumentality were 5.25 and 3.0, respectively, opposite to the predictions. Thus commitment was included to create stronger dissonance.

decision. Pilot data were collected in these two conditions (using NC vs. NI information) and came out as predicted. Those in the Dissonance + Instrumentality selected and read more inconsistent cards than those in the Dissonance Only condition with means of 5.0 and 3.74, respectively. For the first time there was also a choice difference; when asked which stack they preferred to read (after having seen two cards from each stack) Ss in the NC-NI conditions had never before selected the inconsistent stack (of 24 Ss in these conditions only one had ever selected NI). Now some did (1 of 4 in the Dissonance Only, 3 of 4 in the Dissonance + Instrumentality). Questions were also included about the interest and usefulness of the stacks and data on these also came out somewhat as predicted (those in the Instrumentality condition rated the NI stack as more useful than the NC stack while the reverse was true for the Dissonance Only condition). See Table 1 for a summary of these data.

Table 1

Final Pilot Work Data

Instructions:
D = Dissonance Only
I = Dissonance + Instrumentality

Information:
NC = new consistent positive information about the chosen alternative
NI = new inconsistent positive information about the unchosen alternative

n = 4 per cell

	Stack Chosen	Cards Read	Change	Stack I (NC) interest	Stack I (NC) usefulness	Stack II (NI) interest	Stack II (NI) usefulness
D	.25	3.75	-1.25	7.0	7.75	7.0	6.75
I	.75	5.00	-3.75	5.5	5.5	7.0	8.0

D = Dissonance Only

I = Dissonance + Instrumentality

Stack Chosen: 1 = NI, 0 = NC

Cards Read: each NI = 1 (possible range, 0-9)

Change: + = toward initial choice
- = away from initial choice

Interest: 9 = very interesting, 1 = not at all interesting

Usefulness: 9 = very useful, 1 = not at all useful

Appendix B

Descriptions

Dr. A has been teaching at another university for six years. Prior to that he received a Ph.D. from a small university. He has had little research experience but his students considered him a good teacher. He is known to be hard working but not especially ambitious. He is very concrete and practical in his approach. Socially he is quite withdrawn and quiet. He is single.

Dr. B just received his Ph.D. from a large well known university. While in graduate school he did considerable research and had several publications. He has not had much teaching experience but his colleagues considered him a good researcher. Although his working record is not known, he is known to be very ambitious. His approach is quite abstract and theoretical. Socially he is quite outgoing. He is married.

Appendix C

First Choice and Confidence Ratings

Which professor is most likely to succeed? (Please check one)

_____ Dr. A is extremely likely to succeed

_____ Dr. A is very likely to succeed

_____ Dr. A is somewhat likely to succeed

_____ Dr. A is slightly likely to succeed

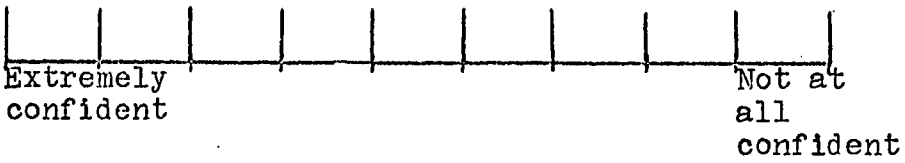
_____ Dr. B is slightly likely to succeed

_____ Dr. B is somewhat likely to succeed

_____ Dr. B is very likely to succeed

_____ Dr. B is extremely likely to succeed

Please indicate how confident you are of this decision.



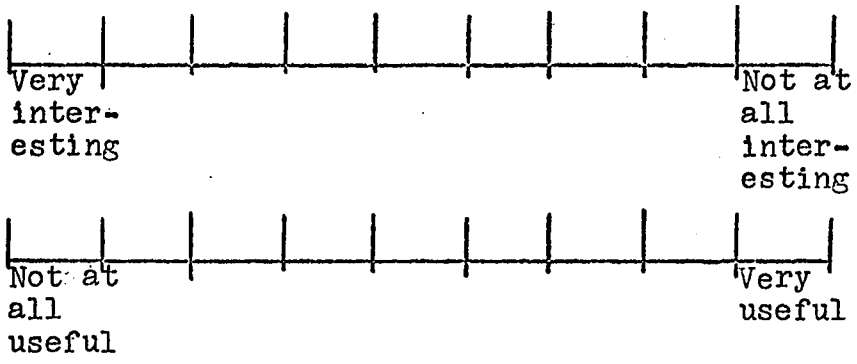
Appendix D

Stack Chosen and Ratings of Interest and Usefulness

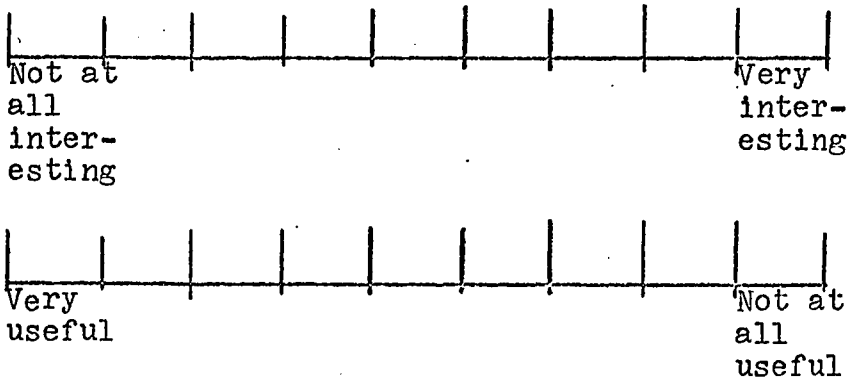
I would prefer to read the cards in: _____ Stack I

_____ Stack II

The information in Stack I would be



The information in Stack II would be



Cards read: 1 2 3 4 5 6 7 8 9

Appendix E

Information for Study I

Old Consistent Information (If A chosen, "Dr. B...")

is socially outgoing.
has not had previous teaching experience.
has a Ph.D.
is abstract and theoretical.
went to a large well known university.
has had 2 years teaching experience.
colleagues considered him an excellent researcher.
has several research publications.
was known to be ambitious.
is married.
working pattern was not previously known.

Old Consistent Information (If B chosen, "Dr. A...")

is socially withdrawn.
research ability is unknown.
has a Ph.D.
is concrete and practical.
was known to be hard working.
went to a small university.
has had 8 years teaching experience.
students at his last job considered him a good teacher.
has little research experience.
is single.
was not known to be very ambitious.

New Consistent (If A chosen, "Dr. B...;" if B chosen, "Dr. A...")

lectures are often poorly received.
academic record was not especially good.
private life is of a questionable nature.
frequently misses lectures.
is not very well liked by the students here.
is not involved in university affairs.
is frequently thoughtless and rude.
rarely receives any recognition.
does not always show proper respect for his students.
sometimes appears lazy.
is somewhat prejudiced.

New Inconsistent (If A chosen, "Dr. B...;"
if B chosen, "Dr. A...")

spends a great deal of time with his students.
continually works hard.
is well liked by his colleagues.
is known to be a good public speaker.
came with excellent recommendations.
devotes considerable time to planning his lectures.
received a University faculty excellence award.
is emotionally stable.
actively contributes to community affairs.
is open-minded.
is kind and considerate.

Appendix F

Information for Study II

Consistent Information (positive information about the chosen alternative)

spends a great deal of time with his students.
is well liked by his colleagues.
devotes considerable time to planning his lectures.
is kind and considerate.
received a University faculty excellence award.
is emotionally stable.
is well informed in his area.
is open-minded.
actively contributes to community affairs.
came with excellent recommendations.
is known to be a good public speaker.
enjoys being with students.
continually works hard.

Consistent Information (negative information about the unchosen alternative)

frequently misses lectures.
is not well liked by the students here.
rarely receives any recognition.
is often thoughtless and rude.
does not always listen to and respect his students.
is not very personable.
is not very well informed in his area.
does not seem to enjoy being with students.
did not have an especially good academic record.
is sometimes closed-minded.
does not always work hard.
gives dull lectures.
is not involved in university affairs.

Inconsistent Information (negative information about the chosen alternative)

does not always work hard.
does not seem to enjoy being with sutdents.
is not a very good public speaker.
did not have especially good recommendations.
is not involved in community affairs.
is sometimes closed-minded.
is not very well informed in his area.
is emotionally unstable.
rarely receives any recognition.
is often thoughtless and rude.
devotes little time to planning his lectures.

is not well liked by his colleagues.
spends little time with his students.

Inconsistent Information (positive information about the unchosen alternative)

is actively involved in university affairs.
gives stimulating lectures.
is hard working.
is open-minded.
had a good academic record.
enjoys being with students.
is well informed in his area.
is personable.
listens to and respects his students.
is kind and considerate.
received an Outstanding Teaching award.
is well liked by the students here.
never misses lectures.

Appendix G

Information for Study III

Consistent Information (positive information about the chosen alternative)

spends a great deal of time with his students.
is well liked by his colleagues.
devotes considerable time to planning his lectures.
is kind and considerate.
received a University faculty excellence award.
is emotionally stable.
is well informed in his area.
is open-minded.
actively contributes to community affairs.
came with excellent recommendations.
is known to be a good public speaker.
enjoys being with students.
continually works hard.

Inconsistent Information (positive information about the unchosen alternative)

is actively involved in university affairs.
gives stimulating lectures.
is hard working.
is open-minded.
had a good academic record.
enjoys being with students.
is well informed in his area.
is personable.
listens to and respects his students.
is kind and considerate.
received an Outstanding Teaching award.
is well liked by the students here.
never misses lectures.

Appendix H

Final Choice and Confidence Ratings

Which professor would you recommend for tenure?
(please check one)

_____ I would be extremely likely to recommend Dr. A

_____ I would be very likely to recommend Dr. A

_____ I would be somewhat likely to recommend Dr. A

_____ I would be slightly likely to recommend Dr. A

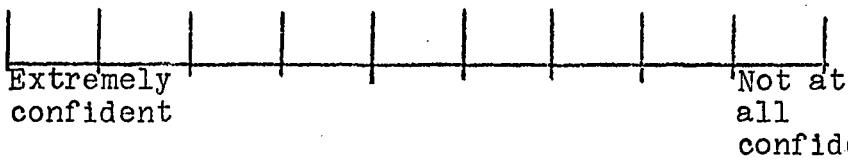
_____ I would be slightly likely to recommend Dr. B

_____ I would be somewhat likely to recommend Dr. B

_____ I would be very likely to recommend Dr. B

_____ I would be extremely likely to recommend Dr. B

Please indicate how confident you are of this decision.



Appendix I

Postexperimental Questions

Were the two stacks of information different? If so, how?

When selecting the cards, what were you thinking about. That is, how did you decide which cards to select and read?

Did you have any difficulty with the procedure? If so, what?

What questions do you think were being investigated in this experiment?

Appendix J

Individual - Topical Inventory
(Form A)

INSTRUCTIONS

You will be given some situations and topics to which we would like you to respond. The responses are given in pairs. You are to choose one response from each pair. Choose the response that most closely fits your opinion or feeling and indicate your choice by blacking "A" or "B" corresponding to the response chosen. Always choose one member of each pair. Never choose both members of the pair and do not skip over any of the pairs. If you agree with both, choose the one you agree with most strongly. If you do not agree with either, choose the one you find the least disagreeable of the two.

Example:

Here is an example of the way the questions will be asked and the way they should be answered. The manner in which you will indicate your choice between the two given responses is illustrated below:

When I am confused . . .

Pair No. (i)	
A	B
I try to find a solution and end the confusion.	I completely ignore the fact I am confused.

(ii)	
A	B
I break out into a nervous sweat.	I remain calm at all times.

How to respond:

First: Decide which response you agree with most.

Second: Indicate which response you agree with most by blacking in the identifying letter on the IBM sheet. Thus, if in comparing the first pair of statements, you agree with the statement, "I try to find a solution and end the confusion," more than with the statement, "I completely ignore the fact that I am confused," you would black in the letter "A" (above the chosen statement). Having chosen

one (never both, never neither) statement from the first pair of statements, you would then move on to the second pair. If, in considering the second pair, you find that you agree more with the statement, "I remain calm at all times," (as compared to the statement, "I break out into a nervous sweat") you would black in the letter "B" on the IBM sheet.

On the pages that follow there are 36 different pairs of responses. There are six pairs on a page. You are to select one response from each pair, the one that more accurately shows your opinion or feeling and record your choice by blacking in the letter indicating the statement chosen. Be frank and indicate, in each case, your true feeling or opinion or the reaction which you actually would make in the situation. Do not indicate how you should feel or act; rather, indicate how you do feel and act.

Make sure that you are aware of the situation or topic that each pair of responses refers to. You will find the situation or topic identified at the top of each page. All items on the page refer to the situation or topic appearing at the top of that page.

When you are finished, your paper should contain 36 marks. Check back and make sure that you have made 36 choices, no more no less.

Remember: (1) Respond only once for each pair; that is, choose one member of the pair, never both, never neither. Indicate your choice by blacking in either "A" or "B."

(2) When you are finished you should have made 36 marks.

Work at your own rate of speed but work straight through the inventory without stopping. Once you have completed a page do not return to it.

YOU MAY BEGIN

1. Imagine that someone has criticized you. Choose the response from each pair that comes closest to your feelings about such criticism. Indicate your choice by blacking in either "A" or "B" on the IBM sheet.

When I am criticized . . .

(1) A I try to take the criticism, think about it, and value it for what it is worth. Unjustified criticism is as helpful as justified criticism in discovering what other people's standards are.

B I try to accept the criticism but often find that it is not justified. People are too quick to criticize something because it doesn't fit their standards.

(2) A I try to determine whether I was right or wrong. I examine my behavior to see if it was abnormal. Criticism usually indicates that I have acted badly and tends to make me aware of my own bad points.

B It could possibly be that there is some misunderstanding about something I did or said. After we both explain our viewpoints, we can probably reach some sort of compromise.

(3) A I listen to what the person says and try to accept it. At any rate, I will compare it to my own way of thinking and try to understand what it means.

B I feel that either I'm not right, or the person who is criticizing me is not right. I have a talk with that person to see what's right or wrong.

(4) A I usually do not take it with good humor. Although, at times, constructive criticism is very good, I don't always think that the criticizer knows what he is talking about.

B At first I feel that it is unfair and that I know what I am doing, but later I realize that the person criticizing me was right and I am thankful for his advice. I realize that he is just trying to better my actions.

(5) A I try to ask myself what advantages this viewpoint has over mine. Sometimes both views have their advantages and it is better to combine them. Criticism usually helps me to learn better

ways of dealing with others.

B I am very thankful. Often I can't see my own errors because I am too engrossed in my work at the time. An outsider can judge and help me correct the errors. Criticism in everyday life usually hurts my feelings, but I know it is for my own good.

(6) A It often has little or no effect on me. I don't mind constructive criticism too much, but I dislike destructive criticism. Destructive criticism should be ignored.

B I try to accept and consider the criticism. Sometimes it has caused me to change myself; at other times I have felt that the criticism didn't really make much sense.

2. Imafine that you are in doubt. Choose the response from each pair that comes closest to your feelings about such doubt. Indicate your choice by blacking either "A" or "B" on the IBM sheet.

When I am in doubt . . .

(7) A I become uncomfortable. Doubt can cause confusion and make one do a poor job. When one is in doubt he should ask and be sure of himself.

B I find myself wanting to remove the doubt, but this often takes time. I may ask for help or advice if I feel that my questions won't bother the other person.

(8) A I don't get too upset about it. I don't like to ask someone else unless I have to. It's better to discover the correct answer on your own.

B I usually go to someone who knows the correct answer to my question. Sometimes I go to a book which will set me straight by removing the doubt.

(9) A I first try to reason things out and check over the facts. Often I approach others to get ideas that will provide a solution.

B I think things over, ask questions, and see what I can come up with. Often several answers are reasonable and it may be difficult to settle on one.

(10) A I realize that I'll have to decide on the correct answer on my own. Others try to be helpful, but often do not give me the right advice. I like to judge for myself.

B I usually try to find out what others think, expecially my friends. They may not know the answer, but they often give me some good ideas.

(11) A I look over the problem and try to see why there is a doubt. I try to figure things out. Some times I just have to wait awhile for an answer to come to me.

B I try to get some definite information as soon as possible. Doubt can be bad if it lasts too long. It's better to be sure of yourself.

(12) A I consider what is best in the given situation. Although one should not rush himself when in doubt, he should certainly try to discover the right answer.

B I act according to the situation. Sometimes doubt can be more serious than at other times and many of our serious doubts must go unanswered.

3. Imagine that a friend has acted differently toward you. Choose the response from each pair that comes closest to your feelings about such an action. Indicate your choice by blacking either "A" or "B" on the IBM sheet.

When a friend acts differently towards me . . .

(13) A I am not terribly surprised because people can act in many different ways. We are different people and I can't expect to understand all his reasons for acting in different ways.

B I am usually somewhat surprised but it doesn't bother me very much. I usually act the way I feel towards others. People worry too much about others' actions and reactions.

(14) A I find out why. If I have done something wrong I will try to straighten out the situation. If I think he's wrong, I expect him to clear things up.

B I feel that I may have caused him to act in a different way. Of course, he may have other reasons for acting differently which would come out in time.

(15) A I first wonder what the trouble is. I try to look at it from his viewpoint and see if I might be doing something to make him act differently toward me.

B It is probably because he has had a bad day, which would explain this different behavior; in other cases he may just be a changeable kind of person.

(16) A It is probably just because something is bothering him. I might try to cheer him up or to help him out. If these things didn't work I would just wait for him to get over it.

B I try to understand what his different actions mean. I can learn more about my friend if I try to figure out why he does things. Sometimes the reasons may not be very clear.

(17) A There has to be a definite reason. I try to find out this reason, and then act accordingly. If I'm right I'll let him know it. If he's wrong, he should apologize.

B I usually let him go his way and I go mine. If a friend wants to act differently that's his business, but it's my business if I don't want to be around when he's that way.

(18) A I don't get excited. People change and this may cause differences. It is important to have friends, but you can't expect them to always be the same.

B I like to get things back to normal as soon as possible. It isn't right for friends to have differences between them. Whoever is at fault should straighten himself out.

4. Think about the topic of people in general. Choose the response from each pair that comes closest to your thoughts about people. Indicate your choice by blacking either "A" or "B" on the IBM sheet.

This I believe about people . . .

(19) A Whatever differences may exist between persons, they can usually get along if they really want to. Although their ideas may not agree, they probably still have something in common.

B People can learn from those who have different ideas. Other people usually have some information

or have had some experience which is interesting and can add to one's knowledge.

(20) A People can act in all sorts of ways. No single way is always best, although at certain times a particular action might be wiser than others.

B Each person should be able to decide the correct thing for himself. There are always a few choices to be made and the individual himself is in the best position to pick the right one.

(21) A Some people think they know what's best for others and try to give advice. These people shouldn't make suggestions unless asked for help.

B There are certain definite ways in which people should act. Some don't know what the standards are and therefore need to be straightened out.

(22) A I can tell if I am going to get along with a person very soon after meeting him. Most people act either one way or another and usually it is not difficult to say what they are like.

B It's hard for me to say what a person is like until I've known him a long time. People are not easy to understand and often act in unpredictable ways.

(23) A People have an outside appearance that usually isn't anything like what can be found on the inside, if you search long and hard enough.

B Each person is an individual. Although some people have more good or bad points than others, no one has the right to change them.

(24) A People can be put into categories on the basis of what they're really like. Knowing the way a person really is helps you to get along with him better.

B People are unlike one another in many respects. You can get along with people better and better understand them if you are aware of the differences.

5. Think about the general topic of leaders. Choose the response from each pair that comes closest to your thoughts about leaders. Indicate your choice by blacking either "A" or "B" on the IBM sheet.

Leaders . . .

(25) A Leaders do not always make the right decisions. In such cases, it is wise for a man to look out for his own welfare.

B Leaders are necessary in all cases. If a leader cannot make the right decisions another should be found who can.

(26) A Leaders cannot provide all the answers. They are like other people--they have to try to figure out what action is necessary and learn from their mistakes.

B Leaders make decisions sometimes without being sure of themselves. We should try to understand this and think of ways to help them out.

(27) A I like a leader who is aware of how the group feels about things. Such a leader would not lead any two groups in exactly the same way.

B A person should be able to put his confidence in a leader and feel that the leader can make the right decision in a different situation.

(28) A There are times when a leader shouldn't make decisions for those under him. The leader has the power to decide things, but each man has certain rights also.

B A leader should give those under him some opportunity to make decisions, when possible. At times the leader is not the best judge of a situation and should be willing to accept what others have to say.

(29) A Some leaders are good, others are quite poor. Good leaders are those who know what is right for the men under them. These leaders deserve the respect of every man.

B Leaders cannot be judged easily. Many things go to make up good leadership. Most people fall short in some way or another, but that is to be expected.

(30) A Leaders are needed more at certain times than at others. Even though people can work out many of their own problems, a leader can sometimes give valuable advice.

B Some people need leaders to make their decisions.

I prefer to be an individual and decide for myself, when possible. Most leaders won't let you do this.

6. Imagine that someone has found fault with you. Choose the response from each pair that comes closest to your feelings about such a situation. Indicate your choice by blacking either "A" or "B" on the IBM sheet.

When other people find fault with me . . .

(31) A It means that someone dislikes something I'm doing. People who find fault with others are not always correct. Each person has his own ideas about what's right.

B It means that someone has noticed something and feels he must speak out. It may be that we don't agree about a certain thing. Although we both have our own ideas, we can talk about it.

(32) A I first wonder if they are serious and why they have found fault with me. I then try to consider what they've said and make changes if it will help.

B If enough people point out the same fault, there must be something to it. I try to rid myself of the fault, especially if the criticizers are people "in-the-know."

(33) A They have noticed something about me of which I am not aware. Although criticism may be hard to take, it is often helpful.

B They are telling me something they feel is correct. Often they may have a good point which can help me in my own thinking. At least it's worthwhile to consider it.

(34) A I may accept what is said or I may not. It depends upon who is pointing out the fault. Sometimes best to just stay out of sight.

B I accept what is said if it is worthwhile, but sometimes I don't feel like changing anything. I usually question the person.

(35) A I like to find out what it means; since people are different from one another, it could mean almost anything. A few people just like to find fault with others but there's usually something to be learned.

B There is something to be changed. Either I am doing something wrong or else they don't like what I'm doing. Whoever is at fault should be informed so that the situation can be set straight.

(36) A I don't mind if their remarks are meant to be helpful, but there are too many people who find fault just to give you a hard time.

B It often means that they're trying to be disagreeable. People get this way when they've had a bad day. I try to examine their remarks in terms of what's behind them.

CHECK AND MAKE SURE THAT YOU'VE CHOSEN ONE MEMBER OF EACH PAIR (A TOTAL OF 36 MARKS)

Appendix K

Scoring for the Interpersonal Topical Inventory

Scoring Key

Item	System A	System B	Item	System A	System B
1.	3	2	19.	3	4
2.	1	4	20.	4	2
3.	3	1	21.	2	1
4.	2	1	22.	1	4
5.	4	3	23.	3	2
6.	2	4	24.	1	3
7.	1	3	25.	2	1
8.	2	1	26.	4	3
9.	3	4	27.	3	1
10.	2	3	28.	2	4
11.	4	1	29.	1	4
12.	2	4	30.	3	2
13.	4	2	31.	2	4
14.	1	3	32.	3	1
15.	3	2	33.	3	4
16.	3	4	34.	1	2
17.	1	2	35.	4	1
18.	4	1	36.	2	3

Norms for the Individual Topical Inventory

(Obtained from 461 Naval Trainees - Tuckman)

	Systems			
Decile	I	II	III	IV
10	13+	12+	12+	13+
9	12	11	11	12
8	11	10	10	11
7	10-11	9	9-10	10-11
6	9-	8-	8-	9-

Norms for the Individual Topical Inventory

(Based on 387 first year Education students)

(University of Alberta - Hewitt)

	Systems			
Decile	I	II	III	IV
10	11+	13+	13+	15+
9	10	12	12	14
8	9	11	12	13
7	8	10	11	12
6	8	9	10	12

System Scoring: (for both cases)

If S scores 9th or 10th Decile in one system and 8th or lower in all others, classify him in his highest system.

If necessary, Ss who score 8th Decile in one system and 6th or lower in all others may also be classified in highest scoring system.

Criterion for Subject Selection for Study III

Concrete Subjects:

(1) Ss who scored System I by both criteria (Tuckman and Hewitt).

(2) Ss who scored System I by the Hewitt criterion and were unclassified by the Tuckman criterion.

Abstract Subjects:

(1) Ss who scored System IV by both criteria (Tuckman and Hewitt).

Appendix L

Summaries of Analyses for Study I

Table 1

Analysis of First Choice

SOURCE	SS	df	MS	F
A	12.167	2.	6.083	-
Error	62.750	9	6.972	
TOTAL	74.917	11		

Table 2

Analysis of Confidence on the First Choice

SOURCE	SS	df	MS	F
A	4.667	2	2.333	1.4
Error	15.000	9	1.667	
TOTAL	19.667	11		

Table 3

Analysis of Second Choice

SOURCE	SS	df	MS	F
A	8.667	2	4.333	-
Error	52.250	9	5.805	
TOTAL	60.917	11		

Table 4

Analysis of Confidence on the Second Choice

SOURCE	SS	df	MS	F
A	23.167	2	11.583	2.242
Error	46.500	9	5.167	
TOTAL	69.667	11		

Table 5

Analysis of Decision Change Scores

SOURCE	SS	df	MS	F
A	25.167	2	12.583	5.808*
Error	19.500	9	2.667	
TOTAL	44.667	11		

* $p < .05$

Table 6

Frequency Data for Stack Chosen

CONDITION	Ss Choosing Each Stack	
Neutral, OC-NC	OC = 1	NC = 3
Neutral, OC-NI	OC = 2	NI = 2
Inconsistency, OC-NI	OC = 1	NI = 3

Appendix M

Summaries of Analyses for Study II

N.B. In all of the tables A is consistency and B is inconsistency.

Table 1

Analysis of First Choice

SOURCE	SS	df	MS	F
A	13.225	1	13.225	2.423
B	2.025	1	2.025	-
A x B	1.225	1	1.225	-
Error	196.500	36	5.458	
TOTAL	212.975	39		

Table 2

Analysis of Confidence on the First Choice

SOURCE	SS	df	MS	F
A	.025	1	.025	-
B	.025	1	.025	-
A x B	.025	1	.025	-
Error	32.900	36	.914	
TOTAL	32.975	39		

Table 3

Analysis of Interest of the Consistent Stack

SOURCE	SS	df	MS	F
A	3.025	1	3.025	1.307
B	1.225	1	1.225	-
A x B	.225	1	.225	-
Error	83.300	36	2.314	
TOTAL	87.775	39		

Table 4

Analysis of Usefulness of the Consistent Stack

SOURCE	SS	df	MS	F
A	5.625	1	5.625	-
B	2.025	1	2.025	-
A x B	1.225	1	1.225	-
Error	207.500	36	5.764	
TOTAL	216.375	39		

Table 5

Analysis of Usefulness of the Inconsistent Stack

SOURCE	SS	df	MS	F
A	2.5	1	2.5	-
B	12.1	1	12.1	2.276
A x B	19.6	1	19.6	3.686
Error	191.4	36	5.317	
TOTAL	225.6	39		

Table 6

Analysis of Interest of the Inconsistent Stack

SOURCE	SS	df	MS	F
A	12.1	1	12.1	4.624*
B	1.6	1	1.6	-
A x B	10.0	1	10.0	3.822
Error	94.2	36	2.617	
TOTAL	117.9	39		

* $p < .05$

Table 7

Analysis of Interest + Usefulness

of the Consistent Stack

SOURCE	SS	df	MS	F
A	.4	1	.4	-
B	.1	1	.1	-
A x B	2.5	1	2.5	-
Error	385.4	36	10.706	
TOTAL	388.4	39		

Table 8

Analysis of Interest + Usefulness

of the Inconsistent Stack

SOURCE	SS	df	MS	F
A	25.6	1	25.6	2.517
B	22.5	1	22.5	2.212
A x B	57.6	1	57.6	5.662**
Error	366.2	36	10.172	
TOTAL	471.9	39		

** $p < .01$

Table 9

Analysis of Interest of the Consistent Stack - Interest of the Inconsistent Stack

SOURCE	SS	df	MS	F
A	3.025	1	3.025	-
B	.025	1	.025	-
A x B	7.225	1	7.225	1.264
Error	205.700	36	5.714	
TOTAL	215.975	39		

Table 10

Analysis of Usefulness of the Consistent Stack - Usefulness of the Inconsistent Stack

SOURCE	SS	df	MS	F
A	15.625	1	15.625	1.374
B	24.025	1	24.025	2.113
A x B	11.025	1	11.025	-
Error	409.300	36	11.369	
TOTAL	459.975	39		

Table 11

Analysis of Second Choice

SOURCE	SS	df	MS	F
A	1.225	1	1.225	-
B	.625	1	.625	-
A x B	7.225	1	7.225	1.928
Error	134.900	36	3.747	
TOTAL	143.975	39		

Table 12

Analysis of Decision Change Scores

SOURCE	SS	df	MS	F
A	3.6	1	3.6	1.747
B	.9	1	.9	-
A x B	32.4	1	32.4	15.719**
Error	74.2	36	2.061	
TOTAL	111.1	39		

** $p < .01$

Appendix N

Summaries of Analyses for Study III

N.B. In all of the tables A is concrete-abstract and B is dissonance-instrumentality.

Table 1

Analysis of First Choice

SOURCE	SS	df	MS	F
A	.4	1	.4	-
B	.1	1	.1	-
A x B	12.1	1	12.1	2.045
Error	213.0	36	5.917	
TOTAL	225.6	39		

Table 2

Analysis of Confidence on the First Choice

SOURCE	SS	df	MS	F
A	.4	1	.4	-
B	.4	1	.4	-
A x B	.9	1	.9	-
Error	58.2	36	1.617	
TOTAL	59.9	39		

Table 3

Analysis of Interest of the Consistent Stack

SOURCE	SS	df	MS	F
A	.9	1	.9	-
B	6.4	1	6.4	1.917
A x B	2.5	1	2.5	-
Error	120.2	36	3.339	
TOTAL	130.0	39		

Table 4

Analysis of Usefulness of the Consistent Stack

SOURCE	SS	df	MS	F
A	9.025	1	9.025	2.084
B	.225	1	.225	-
A x B	.625	1	.625	-
Error	155.900	36	4.330	
TOTAL	165.775	39		

Table 5

Analysis of Usefulness of the Inconsistent Stack

SOURCE	SS	df	MS	F
A	4.225	1	4.225	-
B	.225	1	.225	-
A x B	18.225	1	18.225	3.903
Error	168.100	36	4.669	
TOTAL	190.775	39		

Table 6

Analysis of Interest + Usefulness of the Consistent Stack

SOURCE	SS	df	MS	F
A	4.225	1	4.225	-
B	4.225	1	4.225	-
A x B	.625	1	.625	-
Error	411.700	36	11.436	
TOTAL	420.775	39		

Table 7

Analysis of Interest + Usefulness of the Inconsistent Stack

SOURCE	SS	df	MS	F
A	27.225	1	27.225	2.648
B	11.225	1	11.225	1.072
A x B	38.025	1	38.025	3.699
Error	370.100	36	10.280	
TOTAL	446.375	39		

Table 8

Analysis of Interest of the Consistent Stack - Interest of the Inconsistent Stack

SOURCE	SS	df	MS	F
A	16.9	1	16.9	2.495
B	1.6	1	1.6	-
A x B	12.1	1	12.1	1.787
Error	243.8	36	6.772	
TOTAL	274.4	39		

Table 9

Analysis of Usefulness of the Consistent Stack - Usefulness of the Inconsistent Stack

SOURCE	SS	df	MS	F
A	.9	1	.9	-
B	0	1	0	-
A x B	12.1	1	12.1	1.241
Error	351.0	36	9.75	
TOTAL	364.0	39		

Table 10

Analysis of the Consistent Cards Read

SOURCE	SS	df	MS	F
A	.625	1	.625	-
B	4.225	1	4.225	1.83
A x B	2.025	1	2.025	-
Error	83.100	36	2.308	
TOTAL	89.975	39		

Table 11

Analysis of the Second Choice

SOURCE	SS	df	MS	F
A	.1	1	.1	-
B	6.4	1	6.4	-
A x B	3.6	1	3.6	-
Error	217.0	36	6.028	
TOTAL	225.1	39		

Table 12

Analysis of Confidence on the Second Choice

SOURCE	SS	df	MS	F
A	.625	1	.625	-
B	3.025	1	3.025	-
A x B	11.025	1	11.025	2.829
Error	140.300	36	3.897	
TOTAL	154.975	39		

Table 13

Analysis of Decision Change Scores

SOURCE	SS	df	MS	F
A	.1	1	.1	-
B	.1	1	.1	-
A x B	.9	1	.9	-
Error	188.4	36	5.233	
TOTAL	189.5	39		

Table 14

Analysis of Extremity of the First Choice

SOURCE	SS	df	MS	F
A	1.225	1	1.225	5.188*
B	.025	1	.025	-
A x B	.025	1	.025	-
Error	8.500	36	.236	
TOTAL	9.775	39		

* $p < .05$