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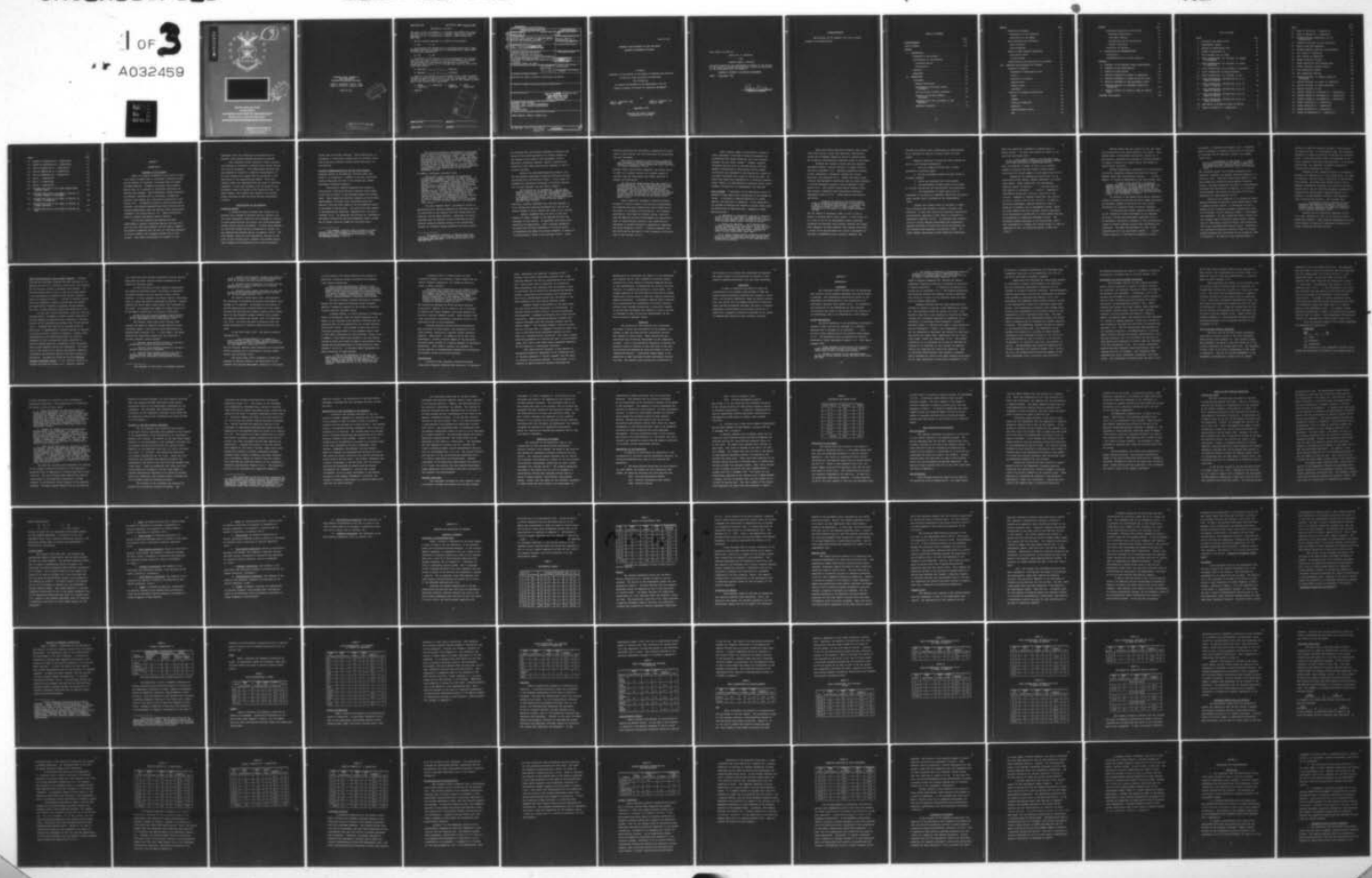

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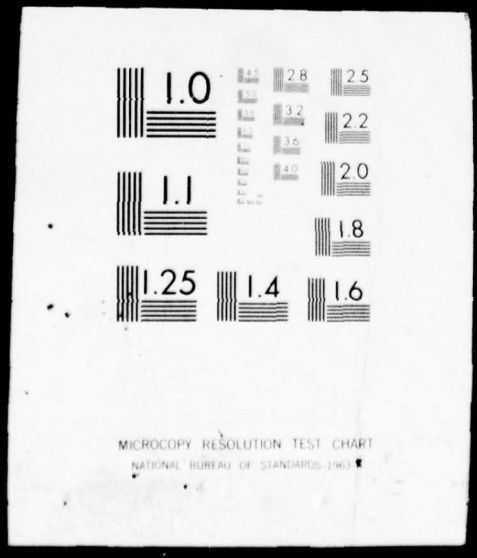

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PERSONAL VALUE SYSTEMS OF USAF NON-RATED AIRCRAFT MAINTENANCE OFFICERS

John P. Schlatter, Major, USAF
James D. Mitchell, Captain, USAF

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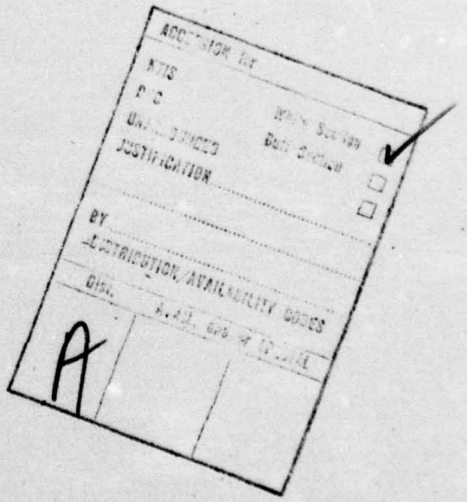

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PERSONAL VALUE SYSTEMS OF USAF NON-RATED AIRCRAFT MAINTENANCE OFFICERS

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Logistics Management

By

John P. Schlatter, BBA
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September 1976

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This thesis, written by

Major John P. Schlatter

and

Captain James D. Mitchell

has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN LOGISTICS MANAGEMENT

DATE: 7 September 1976

Robert B Weaver
COMMITTEE CHAIRMAN

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The sentinel on the rampart; oft curst, seldom praised, but watchful ever.

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CHAPTER I

INTRODUCTION

Statement of the Problem

There is a general acceptance in the field of scientific study of humans that an individual's personal values, and the system, or hierarchy, into which they are formed, influence behavior. Students of personal value systems believe that it is possible to objectively determine and measure these systems. Some researchers, notably Sprangler and England, indicated that an individual, through his personal value system, has a particular orientation in his values (6:6). In England's studies of United States Naval officers, the research suggested that Naval officers can be grouped predominately under two personal value orientations, "pragmatic" and "moral-ethical" (8). These orientations parallel concepts developed by Morris Janowitz.

In his work analyzing the American military establishment, Janowitz classified American military officers into the "military managers" and the "heroic leaders." His research suggested that the ratio of "military managers" to "heroic leaders" has increased through time in this century. This thesis investigated for support of this

hypothesis using the techniques and methodologies of personal value systems research developed by England.

The literature review indicated a direct relationship between an individual's personal value system orientation and his profession. This relationship required that the research be limited to a specific sub-profession of military officers for reasons that are presented in the description of the population and sample. Since this research effort was associated with the study of logistics management, it was also desirable that the specific sub-profession chosen be related to the logistics field. For these reasons, this research was limited to the professional sub-group of USAF non-rated aircraft maintenance officers.

Justification of the Research

Literature Review

A literature search revealed that studies of the personal value systems of American military officers fall into three categories: historical and biographical research, attitude questionnaires and surveys, and values measurement through varying survey instruments. Of these three methods, the third has yielded the most information on values, but has comprised the smallest amount of research (18:27). The first method, historical and biographical research or the study of the "military mind," however, has yielded preliminary insights into similarities in the sets of personal

values held by military officers. These similarities, or congruency of value sets, suggest that the personal values held by military officers follow certain directions, or orientations.

Military professionalism and the Air Force officer. Although studies of the American "military mind" were found to be voluminous,[1] a number of the more significant studies referenced the work of two authorities, Samuel Huntington and Morris Janowitz.

Huntington's research supported the concept of similarities of military officers' personal values based on the driving factor of the profession which the officers share. After examining historical elements of the military establishment, Huntington drew conclusions about the American "military mind" based on the environmental nature of the tasks of the military. He cited three basic aspects of professionalism: expertise, responsibility, and corporateness (12:8). By examining the military as a profession, Huntington believed the military profession forms a unique set of values, which he termed the "military ethic."

---

[1]For example, Janowitz cites 25 directly related sources under a Bibliography of Publications of Inter-University Seminar on Armed Forces and Society, in The Professional Soldier (13:xviii).

> The continuing objective performance of the professional function gives rise to a continuing professional *weltanschauung* or professional 'mind.' The military mind, in this sense, consists of the values, attitudes, and perspectives which inhere in the performance of the professional military function and which are deducible from the nature of that function . . . . A value or attitude is part of the professional military ethic if it is implied by or derived from the peculiar expertise, responsibility, and organization of the military profession [12:61].

In summary, Huntington concluded[2] that:

> The military ethic emphasizes the permanence, irrationality, weakness, and evil in human nature. It stresses the supremacy of society over the individual and the importance of order, hierarchy, and division of function . . . . It accepts the nation state as the highest form of political organization and recognizes the continuing likelihood of wars among nation states . . . . It holds that the security of the state depends upon the creation and maintenance of strong military forces. It urges the limitation of state action to the direct interests of the state, the restriction of extensive commitments, and the undesirability of bellicose or adventurous policies . . . . It exalts obedience as the highest virtue of military men . . . . It is, in brief, realistic and conservative [12:79].

For this research effort, the specific values of American military officers suggested by Huntington were not as significant as the concept that such values should be similarly held by these officers. Huntington rationally concluded that the personal values of American military officers should be similar because of the relationship between the officers' shared profession and their values.

---

[2]Huntington's rationale in reaching these conclusions is embodied in his chapter "The Military Mind," The Soldier and the State, which should be read in its entirety (12).

He indicated that the military profession influences the nature of the values expected in an officer because of the demands of the tasks of that profession (12:61). Employing a different approach, Janowitz indicated the orientation that these values may be expected to take in military officers.

Janowitz has performed exhaustive research into the sociological background of American military officers, concentrating on the military "elite." In his study, he proposed two predominate categories of military officers, the "military manager" and the "heroic leader."

> This distinction is fundamental. The military manager reflects the scientific and pragmatic dimensions of war-making; he is the professional with effective links to civilian society. The heroic leader is a perpetuation of the warrior type, the mounted officer who embodies the martial spirit and the theme of personal valor [13:21].

Basically, Janowitz considered the "military manager" to be an officer who views his profession as a job and the "heroic leader" to be an officer who views it as a calling.

Janowitz suggested that the ratio of military managers to heroic leaders in the American military has increased in this century. He supported this theory both rationally and empirically. From a rational standpoint, he stated that military technology is a driving factor in determining the number of military managers, or amount of "civilianization," found in the military (13:32). Since

military technology has increased in complexity and importance in this century, the civilianization of the military has also increased:

> The civilian character of the military establishment increases as larger numbers of its personnel are devoted to logistical tasks, which have their parallels in civilian enterprise [13:32].

Further, from a sociological viewpoint, the influx (prior to 1972) of a greater variety and a greater number of officers from the draft-based recruitment resulted in greater civilianization.

> As long as the armed forces must rely largely on drafted personnel, or short-term reservists who have volunteered because of the pressures of the selective service system, the military establishment must accommodate itself to personnel who are essentially civilians. The constant flow of civilians into and out of the ranks of the military is a powerful influence against military traditionalism and authoritarian forms [13:32].

From an empirical standpoint, Janowitz analyzed evidence of certain trends in the military establishment, and inferred from this evidence that these trends may be the result of increasing civilianization. His research, performed by interviews and document review, indicated that the American military establishment has experienced a shift in organizational authority from "authoritative domination to greater reliance on explanation, expertise, and group consensus [13:xvii]." Janowitz suggested that this shift may be the result of the increasing civilianization of the military (13:11).

Thus, Janowitz added to Huntington's concept of value congruency in military officers by proposing the orientations that these values may take, the "military manager" and the "heroic leader." Further, Janowitz indicated that the ratio of officers having "military manager" orientations to those having "heroic leader" orientations has increased in this century as a result of increased technology and a shift in the social base. To objectively apply this hypothesis to a scientific research study, however, an understanding of personal values, their systems, orientations, and measurement, was required.

Value systems. A discussion of the theoretical nature of personal values begins with a definition of the concept of values. A universally accepted definition of values, however, was difficult to ascertain. In his approach to the problem of defining the concept of values, Dalby cited the definitions of some theorists. Examples of these definitions are:

> C. Kluckholm--"a conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which influences the selection from available modes, means, and ends of action."
>
> J. Kelly--"an important class of beliefs which is held by members of an organization of society, concerning what is desirable or 'good.' Values result from choices between competing human interests in regard to what constitutes 'good' ends."
>
> M. B. Smith--"highly general orienting preferences which are usually assigned a relatively central and hierarchically superior status in the organization of personality [5:12-13]."

These definitions explicitly revealed three central ideas about values: values have behavioral implications; values can be commonly shared by groups or organizations; and values are hierarchically organized within an individual.

Although the concept of values has been explored throughout history, research interest is largely owing to the work of Spranger (7:3). Spranger proposed six classes of men: theoretical, economical, aesthetical, social, political, and religious (6:3). Allport and Vernon operationally used Spranger's theoretical model by asking subjects to provide responses related to each of Spranger's categories (6:3). The refined Allport-Vernon testing instrument became a frequently used occupational preference measurement device (21:57). Vroom reported that Allport and Vernon:

> . . . compared the scores on the Allport-Vernon Study of Values of persons majoring in or working in a number of different specialities. In general, the distinctive values of each of these groups were congruent with the nature of their chosen profession [21:60].

The key feature of Spranger's model is that it was an effort to classify men by their values. In that sense, he is a link to one of two contemporary social scientists concerned with personal value systems, England, who classified "managers" by their personal value system orientation. A review of the England model will follow a discussion of the other contemporary social scientist, Rokeach, who

directed his efforts toward establishing an understanding of an individual's ranking of values within his value system.

Rokeach's theories of values and value systems are built on the following assumptions:

1. the total number of values that a person possesses is relatively small,

2. all men everywhere possess the same values to different degrees,

3. values are organized into value systems,

4. the antecedents of human values can be traced to culture, society and its institutions, and personality,

5. the consequences of human values will be manifested in virtually all phenomena that social scientists might consider worth investigating and understanding (18:3).

Rokeach thus viewed values as universal in behavioral influence and universal in people, cultures, and societies. He held that values are relatively enduring and hierarchically organized in their power to influence an individual's behavior (18:25). In discussing the classification of values, Rokeach acknowledged that researchers approach the study of values from various disciplines and with differing philosophical orientations (18:24). He asked "whether there might be some compelling theoretical

bases for suggesting a systematic classification of values [18:24]." He found this theoretical basis in the idea that each human value

> . . . is a 'social product' that has been transmitted and preserved in successive generations through one or more of society's institutions [18:24].

Thus, his approach is based, in part, on an informal attempt to identify the main values in which various institutions of society appear to have specialized (18:25).

Bounded by his assumptions, definitions, and an institution-rooted inquiry, Rokeach developed a two-class value theory. These classes are: the instrumental, "specific mode(s) of behavior . . . ," and the terminal, "end state(s) of existence . . . [18:25]." Examples of instrumental values are *courageous*, *imaginative*, and *obedient*. Examples of terminal values are *inner harmony*, *salvation*, *freedom*, and *national security*. In order to facilitate measurement, Rokeach refined his lists of values to 18 terminal and 18 instrumental values. These 36 values comprise the most "central" values individuals hold, hierarchically structured in a value system which may be determined by a measuring instrument (18:28). The instrument Rokeach developed is the Value Survey, which asks respondents to "arrange [the listed values] in order of importance to YOU, as guiding principles in YOUR life [18:27]."

Rokeach stated that the results of this rank ordering can determine value system stability (by retest), value system change, value systems similarities between two or more persons, perceived value systems of reference persons or groups, reliability of single values, and changes of single values (18:31-39).

Rokeach acknowledged a weakness of his Value Survey: "it elicits responses--rankings that come from internal demands rather than from external stimulus . . . [16:51]." However, he listed as advantages of the Value Survery that:

> . . . it seems to be sensitive to differences between cultures, institutions, group membership, and personal experience. It can be employed to test theoretically derived hypotheses but it can also be used in a purely empirical manner to describe similarities in and differences between any two groups one may happen to be interested in [13:52].

In contrast to the Rokeach Value Survey, England's studies of personal values were directed towards developing an instrument capable of capturing the value systems orientation of a specific group in society, managers.

In developing his theory, England recognized that no one "dimension of value assessment can be suggested which will include most measurement approaches [6:51]." He developed a theoretical framework of the relationship of values to behavior against criteria that acknowledge this limitation. The model was developed "in light of the characteristics of the group being studied . . . and was clearly cognizant of the behavior relevance of values

as primary in importance and purpose [6:6]." England's model recognized all possible values which an individual or group may hold as "potential values," but grouped values into:

> . . . non-relevant or weak values . . . (those which would have little or no impact on behavior), and conceived values (those which are likely to be translated from the intentional state into behavior) [6:6].

The "conceived values" were further categorized into operative, intended, and adopted, affecting behavior on a declining scale. Conceived values affect behavior in two ways: behavioral channeling and perceptual screening. Finally, his model recognized the effect of "environmental influences and constraints" on behavior, in an explicit acknowledgement that values are only part of the total explanation of human behavior (6:6-7).

Drawing on the framework of his theoretical model, England developed his Personal Values Questionnaire (PVQ) to measure personal values. In developing his PVQ to measure values of American managers, England used a base of 66 concepts, such as "employee welfare," "achievement," and "obedience." He then categorized these concepts into five classes: Goals of Business Organizations, Personal Goals of Individuals, Groups of People, Ideas Associated with People, and Ideas About General Topics. Depending on the responses to questions concerning these 66 concepts, England believed that individuals may be classed by "mode of valuation." He theorized three possible modes of

valuation in American managers: pragmatic, moral-ethical, and affect-feeling. In the pragmatic mode, the evaluative framework is primarily guided by success-failure considerations. In the moral-ethical mode, the framework is primarily guided by right-wrong considerations. In the affect-feeling mode, the framework is guided by hedonistic, pleasure-pain considerations (6:8-9).

Through his PVQ, England believed it is possible to determine the importance of a value (power mode), the "mode of valuation," and the overall orientation of the personal value system. By relating the results from his PVQ to managers' demographic variables, the results of decision problem tests, and the individual managers' perceptions of organizational effectiveness, England believed it is possible to relate managers' personal value systems to their organizational behavior. He concluded that:

> . . . the personal values of managers are both measurable and important to measure. Values are related to such practical and important concerns as decision making, managerial success, and organizational context differences [6:89].

England used his theoretical framework and PVQ in a study, beginning in 1970, of the values of United States Navy officers. This research represented one of the first attempts to empirically determine and measure the values of American military officers.

USAF officers personal value systems research. Although attitude and preference research has been conducted in the American military on a relatively large scale, this research has not directly related to personal value systems. "An attitude differs from a value in that an attitude refers to an organization of several beliefs around a specific object or situation [18:18]." A review of military periodicals and information centers revealed that few studies were specifically directed at personal values research. The first of these specific studies was conducted in 1954.

In that year, Peters and French, using the "Military Ideology Scale," attempted to predict career intentions of military members by measuring their acceptance of military customs and the underlying philosophy those customs implied (16:1). Although this work was an attitude survey by definition, it represented an indirect approach to determining values and their relation to behavior. Another study, commissioned by the United States Navy, by eliciting responses of Naval enlisted and officer personnel on decision problem questions, attempted to draw conclusions about values possibly held by the respondents. The objective of this study was to examine the possible impacts on recruitment and retention deriving from Navy customs and procedures. Although this study was entitled Military Manpower and Modern Values, it, too, failed to distinguish between attitudes and values (3:1). Specific research

into values and value systems of American military officers began with the Naval officers studies conducted by the Industrial Relations Center.

In 1970 the Office of Naval Research commissioned the Industrial Relations Center, University of Minnesota, to perform research into the personal values of Naval officers. In their research, the Center used the theoretical model of values and behavior developed by England.[3] England modified his PVQ to more closely relate this instrument to the study. He increased the number of concepts from 66 to 86 and added a fourth mode of valuation, Traditional.

> It was felt that certain concepts associated with the military might be best expressed as they relate to the time-honored way of doing things [7:22].

The Center's first study (1970) refined these concepts and modes of valuation through exhaustive Naval literature research and relevance tests administered to selected Naval officers (7:1). In this report, the Center asserted six significant reasons for the importance of military officers' values research:

> 1. Personal value systems influence an officer's perceptions of problem situations he faces.
>
> 2. Personal value systems influence an officer's decision and solution to problems.
>
> 3. Personal value systems influence the way an officer looks at other individuals and groups of individuals thus influencing interpersonal relationships.

---

[3]The Chairman of this Center is Professor England.

> 4. Personal value systems influence the extent to which an officer will accept or resist pressures and goals of military life and military functions.
>
> 5. Personal value systems set the limits for the determination of what is and what is not ethical behavior by an officer.
>
> 6. Personal value systems influence not only the perception of individual and institutional success, but its achievement as well [7:2].

The Center's second study (1971) used England's PVQ instrument to determine and measure the personal value systems of 271 officers. An analysis of the results of the PVQ administration indicated that 47% of the tested officers had Moral-Ethical primary oriented value systems, while 41% had Pragmatic primary oriented value systems. The remaining officers had "mixed" (11%) and Traditional (1%) (8:9). No effort was made to directly relate the system orientations to behavior predictions during this study.

In the third study (1971), the Center collected information on:

> . . . the reported behavior of a sample of . . . Naval officers in several areas, including problem-solving and perceptions of organizational success and its achievement by a work unit [9:74].

Data on officers' behavior when confronted with job-related decision problems and on the officers' decision making styles, were collected (9:74).

The fourth study (1972) attempted to relate the analysis of behavior gained in the third study to the personal value systems measurement conducted in the second.

In this analysis, the Center observed that patterns of behavioral clustering closely correlated with personal value system orientations:

> The principle methodological finding is that meaningful relationships between personal values and reported behavior are found only when value groups are formed through combining conceptual distinctions made from theory (primary orientations and inoperative value notions) with empirical distinctions (hierarchical cluster analysis methods) [10:DD Form 1473 (Front)].

The Naval officers' studies performed by Professor England and the Industrial Relations Center represent specific, systematic research on the content of American military officers' personal values.

Professor Manley, Air Force Institute of Technology School of Engineering, used the England approach in his report on the "Personal Value Systems of Managers and the Operative Goals of the Organization: An In-Depth Analysis of One Firm" (1972). His interest in this area led to a continuing research effort of five graduate theses teams in that school concerning Air Force officers' values (14:4). A summary of this effort was included in the last thesis, written by Madia and titled "A Study of the Personal Value Systems and Job Satisfactions of United States Air Force Officers" (14:11-12). In his work, Madia recognized the major limitation of these studies:

> . . . due to the limitations of the data, the sample may not be representative of all officers . . . . The findings of this study are applicable to all Air Force officers only insofar as the officers in the study are representative of all Air Force officers [14:15].

A reported result of these studies was the correlation between the findings of these studies and the similar research conducted by the Industrial Relations Center on Naval officers:

> The behavioral orientations of this sample of Air Force officers were found to be nearly an equal mixture of pragmatic and moral-ethical orientations, followed by a smaller proportion, but still large number of mixed orientations. In this respect, the POR'S [Primary Orientations] of the Air Force officers were found to be similar to those of the Naval officers surveyed in England's study [14:113].

The similarities between Air Force and Naval officers' orientations, however, do not extend to the orientations of American and Indian managers, previously measured by England in earlier research (14:80). These findings indicated the possible relationship of personal values to the functional nature of the profession.

Although England's modified PVQ and methodology were continued in these studies, the examination of Air Force officers' values still required further extensive research. Additionally, the degree to which their data represented a randomly selected sample of the population was questionable because of a seeming weakness of statistical methodology. Their effort, however, did represent an initial approach at systematically determining and measuring the personal values of Air Force officers.

Justification

A review of the literature concerning personal value system research indicates that values are, in England's

words, "measurable and important to measure [6:89]." Personal value system researchers suggested that values influence behavior and that an understanding of an individual's values might lead to prediction of his behavior. These researchers also indicated that the personal values of individuals may be objectively determined and measured. Further, researchers of both personal value systems and the military establishment agreed that individuals in the same profession will hold similar personal values.

Personal values of individuals in the same profession may follow certain directions, or orientations. In England's study of Naval officers, two such orientations were prevalent, a pragmatic orientation and a moral-ethical orientation. These orientations parallel concepts that Janowitz developed about the "military manager" and the "heroic leader." The "military manager" views his profession as a job and thus, in pragmatic orientation terms, will tend to view those values considered important as also being on a "success-failure" continuum. The "heroic leader" views his profession as a calling and thus, in moral-ethical terms, will tend to view those values considered important as also being on a "right-wrong" continuum.

With these parallel concepts, it was possible to extrapolate Janowitz's hypothesis of the increasing ratio of "military managers" to "heroic leaders" into the realm of personal value system research. In such terms, it was feasible to apply scientific research techniques and

methodologies to investigate for support of this hypothesis. Such research had not been attempted in previous studies. Although the initial studies of England supported the use of such methodologies in determining the values of military officers, his research was basically a pilot study. The studies conducted in the AFIT School of Engineering yielded questionable results owing to less than rigorous statistical sampling techniques. A systematic research effort specifically investigating the relationship of military officers' personal value systems orientations to historical changes in the military environment was expected to add to the body of knowledge of both the military establishment and the social science of personal values.

Objective

The objective of this research was to determine the extent to which the orientations of the personal value systems of USAF non-rated aircraft maintenance officers have changed in recent years. These orientations were contrasted using historical development as the independent variable. Since it was physically impossible to measure the personal values of officers as they were held in the past, this variable was measured by using the length of time of commissioned service. A stratified random sample of the population of USAF non-rated aircraft maintenance officers was used. The personal value systems and orientations of

the officers in this sample were determined and measured. The ratios between the orientations of officers in each length-of-commissioned-service cell were thus determined.

Hypothesis

In order to determine the extent to which the orientations of the personal value systems of USAF non-rated aircraft maintenance officers have changed in recent years, the following hypothesis, based on Janowitz contention, was tested: for the present population of USAF non-rated aircraft maintenance officers, the ratio of officers possessing a moral-ethical value system orientation to those with a pragmatic orientation increases as the length of commissioned service of those officers increases.

CHAPTER II

METHODOLOGY

Instrument

The literature search revealed that the methodology most relevant to the research hypothesis was that developed by England. This methodology specifically results in the measurement and determination of the orientation of an individual's personal value system (10:4). In considering the suitability of the methodology for this research, consideration was given to the reliability and validity of the methodology, and to its adaptability to the research.

England Methodology

The basic assumption of the methodology developed by England is that "the *meanings* attached to a carefully specified set of concepts by an individual . . . will provide a useful description of his personal value system [7:2]." The methodology also incorporates the semantic differential theory developed by Osgood (7:6). This theory proposes that:

1. Words represent things becasue they produce in human organisms some replica of the actual behavior toward these things as a mediation process.

2. Meaning is defined as the representational meditation process between things and words which stand for them.

> 3. The semantic differential measurement operation relates to the functioning of representational processes in language behavior and hence may serve as an index of these processes (meaning) [7:6].

Osgood's research suggested that "meaning has several independent dimensions which can be measured by using sets of bipolar adjectives . . . to determine the meaning of a concept for an individual [7:7]." The England methodology thus develops insights into personal values by measuring the *meaning* of *concepts* to an individual along the dimensions of bipolar adjectives.

England indicated that the value associated with concepts is largely a function of how important or unimportant the individual thinks the concept is to him (7:10). Believing also that is was necessary to discover why these concepts were considered important or unimportant to an individual, he developed another dimension, related to Spranger's model, to identify this reason, using adjectives such as "successful," "right," and "pleasurable" (7:10). The two dimensions of importance and reasons for importance were styled the "power mode" (importance) and the "orientation mode" (reason for importance) (7:10). The primary orientation of an individual can be seen by observing the tendency of an individual to view concepts as important than he also describes by a particular adjective. Thus an individual whose personal value system is "pragmatically" oriented will tend to view those concepts he believes are of "high importance" as also being "successful" (7:10).

An analysis of England's methodology also indicated other fundamental directions in the methodology that were not explicitly described in England's research.

These directions concerned the relationship between an individual's personal value system to his profession, and the differences encountered in measuring the two extremes of a bipolar adjective continuum. Because England's research specifically involved the relationship of personal value systems to organizational behavior (11:5), his methodology thus addresses those concepts directly related to the organization to which the individuals under study belong. The orientations of personal value systems determined by this methodology will be directly related to the organization of the individuals under study. The other implicit direction of the methodology concerns the differences in measuring the two extremes of a bipolar adjective continuum. The methodology stresses the positive aspects of the continuum being used. The orientation of the personal value system is a function of those concepts considered by the individual as being of *high importance* and characterized as *right*, *successful*, or *pleasurable*, as opposed to *low importance* and *wrong*, *unsuccessful*, or *painful*. The methodology thus allows for measuring the relative importance of a specific concept (*high*, *average*, and *low*), but presents only the positive aspects of the other continuums (*right*, *successful*, and *pleasurable*).

The England methodology was used as a framework in building the measuring instrument used in the Navy studies (7:20).

Development of the Navy Studies Instrument

The instrument used in the Navy studies was developed by careful selection of specific concepts, building the instrument with selected orientation modes, and testing and modifying the instrument. A preliminary list of 200 concepts was developed by the researchers from an extensive review of Navy literature plus the inclusion of certain ideological and philosophical concepts (7:20). These concepts were grouped into eight classes: Ideas Associated with Groups, Personal Goals, Military Goals, Military Concerns, Military Functions and Practices, Groups of People, and General Ideas. The concepts were then subjected to a series of research seminars in which the relevance of each concept was evaluated and from which 170 concepts were retained (7:20). The 170 concepts were then assembled on two relevancy forms which were administered to a selected sample of Naval officers and contract administrators (7:21). The mean relevancy (on a 0 to 100 scale) and variation of each concept were subjected to criteria tests for relevancy (>70) and distribution (7:22). Two "tryout" instruments, based on England's Personal Value Questionnaire, were also created using the 170 concepts. The orientation modes selected were: right, successful, pleasurable, and traditional. The traditional orientation mode was added in the

belief that certain concepts might be best expressed as they relate to the time-honored way of doing things (7:22). These two "tryout" forms were administered to a selected sample of Naval officers (7:21).

After subjecting the results of the relevancy forms and "tryout" forms to criteria tests for relevancy, 88 concepts were retained for inclusion in a final pilot form (7:23). This pilot form was administered to a sample of 100 Naval officers on a test-retest cycle of seven days (7:25). Sixty-nine individuals responded both times, and the results from these forms created the basis for tests for reliability (7:27). Eight-six concepts met the reliability criteria and comprised the final instrument that was used in the Navy studies (7:29). These concepts are listed in Appendix A. The pleasurable orientation mode was deleted because of its infrequent selection by the respondents (7:29).

Use of the Navy Studies Instrument

The final form of the Navy studies instruments contained 86 concepts related to the Naval profession. These concepts were arranged into eight general classes. Each respondent was asked to rank each concept as to the relative importance the concept had to him. The respondent placed a check in the block corresponding to that level of importance. Thus for the concept EXPERIENCE, if the respondent considered this concept to be of average

importance to him, he checked that block. The respondent was then asked to select the adjective that best described what the concept meant to him and to place a 1 in the appropriate block. He was then asked to select the adjective that least described the concept and to place a 3 in that block. The respondent then placed a 2 in the remaining block (7:C-2). In the instructions, the instrument purposely left the meaning of the adjectival descriptors to be decided by the respondent, without further clarification. An attempt to clarify these descriptors would modify the mediation process introduced by the semantic differential method and might result in a biasing effect on the respondent's reply. For example, further defining the descriptor, "right," by adding defining phrases such as "just" or "moral," could predetermine the mediation process in a respondent and lead to biased results (15).

Using the previous example of the concept EXPERIENCE, the completed form appeared as:

EXPERIENCE

High Imp.			Low Imp.
____	X	____	

2 right

1 successful

3 traditional

The orientation of the respondent's personal value system was determined by considering the concepts rated as

of high importance as a function of the accompanying descriptive adjectives. This determination of orientation was based on three criteria tests:

> 1. Among the concepts an individual reports as being of high importance, identify the proportion classified as successful, as right, and as traditional, and select the largest category. More precisely, one identifies the largest of the following conditional probabilities: the probability or responding successful given high importance, P(S/HI); the probability of responding right given high importance, P(R/HI); and the probability of responding traditional given high importance, P(T/HI).
>
> 2. Compare the largest of the above conditional probabilities to its complement. For example, if P(S/HI) is the largest of the three, then its complement is the probability of responding successful given average and low importance, P(S/AI and LI). If the former is larger than its complement, the individual's primary orientation is pragmatic. If, however, the complement is larger, the individual is classified as having a mixed orientation.
>
> 3. After having determined an individual's primary orientation, identify his operative values category. For example, for a "pragmatic" individual, the operative values category will consist of those concepts which are jointly rated by him as being of high importance and successful. If the proportion of the concepts in this category, i.e., P(SΩHI) is more that .15, the individual retains his primary orientation. If the proportion is less than .15, the individual is classified as having a mixed orientation [10:7].

The first two criteria tests determined the function of the primary orientation adjective to the respondent's perceived level of importance of concepts described by that adjective. The third criteria test examined the relative significance of the conditional probability of those concepts in the operative values category to the remaining concepts. The Naval studies research did not disclose the

meaning of the Mixed category, but this research concluded that this category included individuals whose primary orientation could not be significantly determined by the instrument. The instrument thus determined the primary orientation of the respondent's personal value system and his operative values as the orientation and values related to his profession.

Validity of the Navy Studies Instrument

For this research, the reliability and validity of the Naval studies instrument were examined as they related to the determination of the orientation of an individual's personal value system. The results of the test-retest sample conducted in the development of the instrument indicated that the average reliability coefficient for concepts ranked similarly on the importance scale was .83, and on the adjective scale, .73 (7:27-28). The reliability coefficient for primary orientations was .80 (7:30). These data indicated that the instrument was generally reliable, but consideration was given to the short time span between tests (seven days). Given the assumption that values are relatively stable and unchanging, and the large number of possible permutations associated with ranking 86 concepts across two dimensions, this research effort concluded that the instrument could be considered reliable.

The validity of the instrument was examined for subjective and objective evidence of support. The

instrument was logically developed from a conceptual theoretical model (7:7). The content of the instrument was systematically developed from a series of relevancy tests conducted by experts and sample groups, subjecting the results of the tests to logically developed criteria tests (7). Objective support was found in the final results of the Navy studies and similar studies conducted by England. These results indicated the predictive quality of the instrument in determining organizational behavior from an examination of the measured operative values of an individual (10). The results of the Navy studies were not considered wholly conclusive, however, because of the lack of control over other variables that may have impacted the observation.[4] Although the results of the Navy studies were weakened by this lack of control, these results supported prior results of studies conducted by England. England's prior studies of American and Indian managers, using instruments similar to those of the Navy studies, also indicated the predictive quality of the instrument in determing organizational behavior (11:7). The predictive quality of the instrument thus supported evidence of

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[4]The conclusions of the Navy studies concerning the correlation between the operative values of individuals and the individuals' organizational behavior determined by the individuals' responses to behavioral instruments were weakened by an apparent equally strong correlation to the individuals' rank, time in service, and experience (10).

objective validity. The examination of the Navy studies instrument concluded that the instrument was both reliable and valid.

Adaptability of the Instrument to the Research

A review of the concepts contained in the Navy studies instrument (Appendix A) indicated that the relevancy of the concepts to USAF non-rated aircraft maintenance officers would be the same as to Navy officers. The concepts relate to the American military profession, and as such are relevant for all services. The concepts were thus retained for an instrument determining the orientations of Air Force officers' personal value systems. However, the list of concepts had to be modified to eliminate six concepts unique to the Naval profession: Sea Duty, Midshipmen, Petty Officers, Seamanship, Ship Welfare, and Crew Welfare. These six concepts are associated with meanings and values that cannot be exactly translated into similar meanings and values found in the Air Force. One concept, Shipmates, has a similar counterpart in the Air Force, and this meaning and value was determined by substituting the concept "co-workers" for "shipmates." Although the concept "co-workers" is not an exact counterpart to the meaning and value of the concept "shipmates" in the Navy, the concept "co-workers" does relate to a specific meaning and value for Air Force officers.

The orientation modes used in the Navy studies instrument were similarly adapted, based on their relevancy to all military services. However, the mode described by the adjective "traditional" was deleted. The reasons for deleting this mode were the infrequent use of the mode in the Navy studies and the inconsistency of this mode to the semantic differential theory. Of the 258 Navy officers included in the Navy studies, only 2 (1%) were determined to have personal value systems with Traditional orientations (10:9). The traditional mode is inconsistent with the semantic differential theory in that it is not described by a bipolar adjective. The continuums between the bipolar adjectives "success-failure" and "right-wrong" are not applicable to the adjective "traditional." The instrument was thus adapted by including only the "success" and "right" orientation modes, and the Methodological Decision Rule (3) was changed from .15 to .20. The original decision rule was based on the intercorrelation associated with a 3 X 3 matrix (Importance and Orientations). Because elimination of the Traditional mode reduced this matrix to a 3 X 2 size, the decision rule was adjusted accordingly. These adaptations were consistent with past utilization of the Personal Value Questionnaire.

Research Instrument

The instrument developed for this research, based on England's concepts and adapted from the Navy studies

instrument, is found in Appendix B. The validity of the instrument was based on the adaptability and validity of the Navy studies instrument. The instrument used in the Navy studies was found to be reliable, and its validity was supported from both subjective and objective evidence. With the modifications in concepts and orientation modes, the Navy studies instrument was adaptable to this research because of its relevancy to all American military services. Concluding that the instrument was appropriate, the research addressed the problem of an appropriate experimental design for creating and interpreting necessary data to test the research hypothesis.

Population and Sample

The selection of the population, that is, the orientations of USAF non-rated aircraft maintenance officers' personal value systems, was based on the relationship between an individual's personal values and his profession. The literature search indicated that an individual's personal value system is a result "of all the cultural, institutional, and personal forces that act upon a person throughout his lifetime [18:23]." The research hypothesis was based on the theory that the ratio of pragmatic to moral-ethical officers has increased through time as a result of these cultural, institutional, and personal forces. Control over the impact of the variables introduced by these forces was thus limited to the development of a

representative sampling process, with one significant exception. The exception was the variable introduced by the relationship of an individual's personal value system to his profession. The research initially considered this variable by selecting a sub-profession, aircraft maintenance officers, in which the relationship between the officers' value systems and profession would be held constant. However, officers may have changed into the aircraft maintenance sub-profession during their career for reasons independent of the forces described, such as the personnel decisions of career broadening and rated supplement assignments. The only significant group of such officers were found to be rated officers (4), and control over this variable was achieved by restricting the research population to non-rated aircraft maintenance officers.

Description of the Population

In addition to restricting the population to the orientations of non-rated aircraft maintenance officers, the following parameters were used to fully describe the population:

1. Non-rated officers whose Duty Air Force Speciality Code (DAFSC) *and* Primary Air Force Speciality Code (PAFSC) are among the following Air Force Specialities:

402X - Aircraft Maintenance Officer

401X - Aircraft Maintenance Staff Officer

404X - Avionics Officer

403X - Avionics Officer, Staff

419X - Aircraft Maintenance Director

Use of the "X" in the fourth position indicates inclusion of all officers holding the AFSC without regard to degree of technical qualification. In addition, subspecialities, such as "maintenance training qualified," which would be indicated by an AFSC prefix or suffix, were included (20:12-29).

2. Officers with a Total Active Federal Commissioned Service Date (TAFCSD) falling between 1 January 1956 and 31 December 1975, inclusive.

A complete computer list of address labels for all active Air Force officers meeting the above parameters was received from the Air Force Military Personnel Center on 14 June 1976. The labels were alphabetically ordered, by year group. Year group is defined as the year of an officer's TAFCSD. For reasons that will be given in the Design to Test Research Hypothesis section, the population was divided into eight cells. Seven cells were comprised of the officers having from zero to fourteen years of commissioned service, divided into two-year groups. Thus, those officers in the 0-2 years of service cell had a TAFCSD between 1 January 1974 and 31 December 1975. The eighth cell was collectively comprised of all officers with a TAFCSD between 1 January 1956 and 31 December 1961, and was termed the 14-20 years of service cell. The total numbers of the population separated into these cells are presented in Table 1.

TABLE 1

POPULATION AND SAMPLE SIZES

Years of Service	Population	Sample
0- 2	262	52
2- 4	267	53
4- 6	216	43
6- 8	276	55
8-10	312	62
10-12	206	41
12-14	254	51
14-20	178	35
Totals	1971	392

Description of the Sample

For reasons that will be given in the Design to Test Research Hypothesis section, a 10% random sample from each cell was determined necessary to test the research hypothesis. The results of previous Air Force surveys indicated that the expected return rate for mailed surveys was 50% (17). Based on this expected return rate, the actual sample drawn from the population was thus 20% from each years of service cell. The random selection process was conducted independently for each cell. In each cell, the names were sequentially numbered. A random selection of 20% of the total numbers in each cell was performed using

the AFIT School of Logistics computer program, AF.LIB/RNDSMPL (1:6-29). A different random seed was used for each selection process. The total numbers of the sample of officers, separated in years of service cells, are also presented in Table 1. It should be emphasized that these numbers reflect the selected sample, and not the actual number of responses received from this selected sample. Surveys were then mailed to the officers in this selected sample.

Data Collection and Processing

Data Collection

The research instrument was mailed on 18 June 1976 to each officer selected in the sampling process. The mailing addresses were the officers' organizational units currently recorded at the time of the computer listing. To allow sufficient time for processing and reporting the results of the research, a cutoff date of 16 July 1976 was established for data to be used in the research. Surveys returned after that date were not used in this research effort, but were processed and reported separately. The results of data returned after the 16 July 1976 cutoff date are found in Appendix C.

Data Processing

Each returned survey was coded on an AF Form 322 for processing using an OPSCAN device. The coded results

from the OPSCAN readout were then written to a computer file. After the accumulation of all data received at or before the cutoff date, the computer file was processed by a computer program. The master computer program used the three Methodological Decision Rules to determine each respondent's value orientation, and then sorted the determined orientation by years of service cell.

During the coding process, it was noted in some cases that the respondents left the importance or adjective descriptor blank on one or more of the concepts. It was decided to consider the data useable for the research if no more than four of the eighty total concepts were left blank and no more than two concepts were left blank in any one group of concepts. It was assumed that omissions of that degree would not bias the resulting orientation determined by the Methodological Decision Rules. The computer program adjusted for such omissions by reducing the total number of concepts used in the determination process by that amount. Any survey that had more omissions than the decided limits was determined unuseable for this research.

During the course of the data collection, approximately twenty of the respondents indicated questions concerning the instructions, either by telephone conversations or by written comments on the returned survey. These questions all concerned the "meaning" of the adjective descriptors, "right" and "successful." Caution was exercised by the research team in elaborating beyond the

instructions of the survey. As previously stated, a more definitive explanation of the meaning of these descriptors could have biased the responses of the individuals by introducing an unknown variable into their mediation process. The meaning of the adjective descriptors had to be left to the individual respondents.

Ten demographic questions were included with each survey. Additionally, four questions designed as key indices of job satisfaction were included. These fourteen supplemental questions can be found at the back of the Personal Values Questionnaire displayed in Appendix B. The responses to these questions, except for Years of Commissioned Service, were not originally designed to be used in this research effort. The questions were included to form a data base for future research. The responses to these supplemental questions were coded and processed along with the survey.

After processing, the results were displayed by a master computer printout. This printout indicated the number of the three orientations (Moral-Ethical, Pragmatic, and Mixed) determined in each of the eight years of service cells. These results were then subjected to the statistical and criteria tests of the research hypothesis.

Design to Test Research Hypothesis

Statistical Tests

The data collected from the sample of officers' orientations was nominal level data. That is, the results from the PVQ allowed only categorization of the responses by the labels: Pragmatic, Moral-Ethical, or Mixed. As such, statistical analysis of the raw data was limited to non-parametric inferential statistics. An appropriate non-parametric test for use was the chi-square contingency test for association. However, two problems were noted on the use of this test. First, the expected low number of Mixed orientations in each cell would violate the minimum cell restrictions of the chi-square test. Secondly, the test would indicate only that an association existed in the data, but would not indicate the direction or nature of that association. Finally, a computer simulation of random sampling a simulated population which supported the research hypothesis indicated that the chi-square test possibly is not sensitive enough to detect the expected gradual shift in orientations over the eight years in service cells. The chi-square test was thus rejected as an inferential statistical test.

It was decided instead to use the statistical test for simple linear regression. Although the raw data were not at a level to support such a technique, the percentages of Moral-Ethical orientations in each cell could be used as best estimate ratio level data points. Two problems existed

concerning this test. The percentages of Moral-Ethical orientations could have been calculated either against all orientations in the sample cell (Moral-Ethical, Pragmatic, and Mixed), or could have been calculated against only the orientations of research interest in the cell (Moral-Ethical and Pragmatic). It appeared more meaningful for the research to calculate the Moral-Ethical proportions against only the orientations of research interest (Moral-Ethical and Pragmatic). The second problem concerned the assumptions implied in regression. The percentages had to be meaningful, that is, based on sufficient numbers and representativeness, for the regression analysis to be meaningful. For this reason, a 10% sample from each of the original population cells was required to establish representativeness. Further, the population was divided into the eight cell groups to ensure that sufficient numbers of orientations were present in each sample cell to make the percentages meaningful. For example, a 100% Moral-Ethical proportion in a cell becomes meaningless if the raw numbers are one and zero. This limitation also dictated the large number of year groups in the eighth cell.

The simple linear regression test, using years of service as the independent variable and percentage Moral-Ethical orientation as the dependent variable, was chosen as the inferential statistical test. The regression coefficient was not used as a predictive statistic; rather, only the t-test for significance of regression was applied.

Stated statistically:

H_0 $B_1 \leq 0$ $\alpha = .05$

H_1 $B_1 > 0$ $t = 1.943$ (19:617)

Failure to reject the null hypothesis would weaken support for the research hypothesis. A rejection of the null hypothesis would infer a positive association existed in the population between years in service and percentages of Moral-Ethical orientations.

Criteria Tests

Two criterai tests were used. One examined the approximated degree of association, and the other analyzed the data for trend evidence. The research hypothesis states that as length of commissioned service increases, the percentage of officers possessing Moral-Ethical orientations will increase. The literature search did not suggest the degree of the rate of increase, but it was concluded that the rate would be significantly evident to give support to the research by Janowitz. An overall change of 8% between the 0-2 and 14-20 years of service cell was considered a minimum expected change. This change equates to a minimum regression coefficient of 0.01 in the smaple regression line. If the regression coefficient were equal to or greater than 0.01, support of the research hypothesis would be indicated. A coefficient less than 0.01 would weaken support for the hypothesis.

4. Value: An enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence (18:5).

5. Value system: An enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance (18:5).

6. Value system orientation: Within an individual's personal value system, the tendency to describe concepts, and hence values, considered of relatively high importance by a specific bipolar adjective, such as "successful" or "right."

7. Pragmatic orientation: The tendency of the relatively high importance concepts to be described by the bipolar adjective, "successful."

8. Moral-Ethical orientation: The tendency of the relative high important concepts to be described by the bipolar adjective, "right."

9. Mixed: A category including all observations of officers' personal value systems whose orientations could not be determined from the measuring instrument as either Pragmatic or Moral-Ethical.

4. Value: An enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence (18:5).

5. Value system: An enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance (18:5).

6. Value system orientation: Within an individual's personal value system, the tendency to describe concepts, and hence values, considered of relatively high importance by a specific bipolar adjective, such as "successful" or "right."

7. Pragmatic orientation: The tendency of the relatively high importance concepts to be described by the bipolar adjective, "successful."

8. Moral-Ethical orientation: The tendency of the relative high important concepts to be described by the bipolar adjective, "right."

9. Mixed: A category including all observations of officers' personal value systems whose orientations could not be determined from the measuring instrument as either Pragmatic or Moral-Ethical.

10. Moral-Ethical proportion: The proportion of Moral-Ethical orientations in any cell or group to the total of Moral-Ethical and Pragmatic orientations within that cell or group; that is, ME/(ME + PR).

11. Pragmatic proportion: The complement of the Moral-Ethical proportion; that is, PR/(ME + PR).

CHAPTER III

ANALYSIS AND DISCUSSION OF FINDINGS

Analysis of Results

Parameters of Experimental Data

Table 2 presents a tabulation of the gross numbers, by years of service for the population, of the selected sample and returned/unreturned responses. Of the returned useable responses, 31 respondents left one or more of the importance or adjective descriptors blank on the concepts. There was a total of 52 such omissions among the total useable responses, for an average of 1.7 omissions for those 31 respondents leaving blanks. The 12 responses titled "Unuseable Returned" were those responses that had blanks in excess of the decision rule presented in Chapter 2, page 28. The 18 responses titled "Bad Address" were those surveys returned because the officer was no longer at the addressed organizational unit.

Although the useable response rate of 53% met expectations and provided data that could be subjected to meaningful analysis, special attention was given to the below average responses rates from the 4-6 and 10-12 years of service cells, and their possible impacts on the

distributions of the experimental data. Follow-up action to obtain responses from the unreturned portion of the sample was concentrated on these two years of service cells. The follow-up letter which accompanied another copy of the questionnaire is presented in Appendix C. Unfortunately, follow-up useable responses were not returned in time to be included in this [illegible] these responses are presented separately in the further breakout of the response results received after the cutoff date (Appendix C). The 207 initial useable responses provided the data used in the research analysis, and will be referred to as the experimental sample.

TABLE 2

EXPERIMENTAL SAMPLE

Years of Service	Population	Sample	Useable Returned	Unuseable Returned	Bad Address	Not Returned
0- 2	262	52	26	3	3	20
2- 4	267	53	33	2	0	18
4- 6	216	43	17	1	3	22
6- 8	276	55	29	3	3	20
8-10	312	62	34	1	2	25
10-12	206	41	18	0	4	19
12-14	254	51	33	1	2	15
14-20	178	35	17	1	1	16
Total	1971	392	207	12	18	155

TABLE 3

RESULTS OF EXPERIMENTAL DATA

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Moral-Ethical Proportion (Percent)
0- 2	10	11	5	47.6
2- 4	1	14	5	50.0
4- 6	9	3	5	75.0
6- 8	8	15	6	34.8
8-10	10	16	8	38.5
10-12	3	12	3	20.0
12-14	12	13	8	48.0
14-20	5	9	3	35.7
Total	71	94*	43	43.0

*Includes one respondent failing to mark years of service question.

Results

The research hypothesis states that the Moral-Ethical proportions will increase as years of service increase. The results of the experimental sample data are presented In Table 3. The data indicate that the research hypothesis cannot be supported by any of the statistical or criteria tests. The sample statistic for coefficient significance is -1.29, obviously below the required t value of 1.943. The coefficient itself was -0.03, which indicates a negative regression slope in the data; the coefficient criteria test called for a positive regression coefficient

of 0.01. Trend analysis of the data indicated a negative trend in Moral-Ethical proportions against years of service. A Spearman rho coefficient of association was calculated as a descriptive statistic only, to further describe the association that exists in the experimental data. The Spearman rho is -.4524. Clearly, the experimental data produced results that not only did not support the research hypothesis, but actually approached the reverse of the hypothesis.

It was concluded that no further inferences to the population could be made from the results of the experimental data; other than no support of the research hypothesis, nothing can be inferred to the population. The research hypothesis and the inferential statistical test were specific and developed from a logical research approach. Further inferential statistical techniques could not be supported by research logic and were thus considered inappropriate for this research. Rather, the research concentrated on the examination of the experimental data to determine possible causes for the non-support of the research hypothesis.

Discussion of Results

Three possible causes of the data not supporting the research hypothesis were identified. First, the population may support the research hypothesis, but the experimental sample data did not support the hypothesis

because of the stochastic error introduced by the random selection process. Second, the research hypothesis could be in error, and the experimental data could actually represent the population. In this case, the error resulted from some flaw in the research prediction logic. Finally, the third possible cause is that the research instrument did not accurately measure value orientations, either because of its weak sensitivity or questionable validity. Each of these three possibilities was examined with respect to the experimental data.

Sampling Error

The random selection process of the population was conducted independently for each years of service cell. The experimental sample Moral-Ethical proportion data points represent independent sample estimates of their respective population years of service cells. As such, they may be subjected to statistical analysis to establish confidence limits for their respective population proportion. However, a statistical analysis of the system of eight independent sample data proportions would require individual confidence limits of 98% to achieve a system confidence of even 85%. Instead, a subjective analysis was conducted. For the research hypothesis to be supported, the Moral-Ethical proportion of the later years of service cells must have increased as years of service increased. Thus, the collective Moral-Ethical proportion of the later years of service

cells must have been greater than the collective proportions of the earlier years of service cells. For this analysis, the collective proportion of the years of service cells of 0-6 were compared to the collective proportion of the 6-20 cells.

The collective Moral-Ethical proportion of the 0-6 cells in the experimental data is 54.1%. The collective proportion of the 6-20 cells is 36.9%. The difference is 17.2%. A 95% confidence interval on the difference between the collective cells is between 1.6% and 32.8% (22:178). This analysis indicates that there is a statistically significant difference between the proportions of the collective cells, but that the difference is the reverse of that predicted. That is, the collective later years of service cells have a smaller Moral-Ethical proportion than have the earlier cells. This judgment was subjective because of the statistical hazards implicit in pooling data gathered from unequal, independent samples. It was thus concluded that the possible cause of the data not supporting the research hypothesis because of sampling error has a relatively low subjective probability.

Research Logic

The research logic leading to the research hypothesis was reexamined in light of the experimental data results. The implications to this research from the

empirical research by Janowitz were particularly studied. Some important considerations relating to Janowitz's research were apparently given insufficient weight in the original research logic. Janowitz's research specifically concentrated on the power elite of the American military in this century. His central research was limited to general and flag officers and service academy cadets (potential general and flag officers). Our research concentrated instead on company and field grade officers and, in the experimental sample, there were only five service academy graduates. Additionally, Janowitz's theories concerning the increasing "civilianization" of the American military were based on sociological trends spanning several decades. In contrast, our sample reduced this span to the last twenty years.

Still, the concept that the American military has been increasingly "civilianized" was based on sociological and technological trends that impacted the American military, with particular emphasis on the recruitment of officers and enlisted men into the military. As such, these trends should have also been reflected in the results of the experimental sample. They were not. A possible cause for this absence of research support for Janowitz's theory is the hazard of approximating a longitudinal time study by a transversal study at one point in time, particularly in the area of behavioral research.

A research assumption was that values and their orientations are relatively stable and do not change over time. This assumption may not be completely correct. It is possible that orientations may in fact change over a sufficiently long length of time, partially as a result of the socialization process on an individual by his environment. Relaxing this research assumption yielded a possible cause for the research results. If the environment of an individual has a particular character that supports one value orientation over another orientation, then individuals within that environment may become socialized over time and in fact change their orientations. Further, this particular character of an environment might also manifest itself through self or group initiated attrition of individuals not possessing the favored orientation. If such environmentally induced forces exist in the aircraft maintenance career field, they may have interacted with and counteracted the sociological and technological influences on the non-rated officers described by Janowitz.

It may be that the theory of the "civilianization" trend in the American military establishment postulated by Janowitz is correct on a macro level of the entire establishment. When applied to the specific career sub-profession of aircraft maintenance, however, the environmental forces in the sub-profession itself counteracted this trend by a socialization process. If the aircraft maintenance

profession has already been a "civilianized" area for the past twenty years, then there may have been a socialization process affecting the officers in that field over time. In short, the aircraft maintenance field may favor Pragmatic value orientations, and officers with Moral-Ethical orientations were either "socialized" into changing to Pragmatic orientations, or withdrew from the field through self or group generated attrition. Detailed analysis of the data over demographic categories was pursued in an effort to further explore the supposition that the aircraft maintenance field possesses a Pragmatic orientation character. The results of this further analysis are presented in the section, "Analysis of Pragmatic Proportions."

Instrument

A third possible cause for the experimental data failing to support the research hypothesis lies in the instrument used in the research. The instrument was reexamined for its sensitivity and validity. The sensitivity of the instrument is defined as its ability to categorize a value orientation as either Pragmatic or Moral-Ethical. Referring to Table 3, 43 of the responses fell in the Mixed, or undetermined, category. Of this number, six were a result of Methodological Decision Rule 1; the High Importance, Right indicated concepts equaled the High Importance, Successful concepts. Thirty-five were a result

of Methodological Decision Rule 2; the concepts indicated High Importance in the primary orientation were equal to or less than the complementary Average and Low Importance concepts. Two were a result of Methodological Decision Rule 3; the primary orientation concepts were less than 20% of the total concepts. The Methodological Decision Rules are fully outlined on pages 28 and 29. The 43 Mixed responses were 21% of the total useable responses. The presence of this large number of undeterminable orientations has an unknown effect on the overall results, particularly when the numbers of Mixed responses are examined against the Moral-Ethical proportion in each years of service cell.

The validity of the instrument was based on the validity of the Naval studies instrument developed by England. An objective test of the research instrument validity is not possible by examining the experimental data, since no other evidence exists for comparison. It was possible, however, to subjectively examine the instrument validity by searching for logical inconsistencies in the experimental data. Analysis of the data to further explore the possibility of instrument sensitivity weakness or questionable validity is presented in the section, "Instrument Sensitivity and Validity."

Analysis of Pragmatic Proportions

Table 4 reflects a comparison of the experimental data results to previous research results using the England methodology. The proportions used in this table reflect the percentages of the total responses. A distinctive difference is obvious when comparing the results of this research to those of the previous research on Air Force and Naval officers.[5] In fact, the results of this research more closely approximates those of the previous U.S. Managers research. It should be noted, however, that the previous Air Force research sample contained only 1.7% aircraft maintenance officers (14:73). The difference between the results of this research and previous Air Force and Naval officers research suggests further the possibility of a Pragmatic character associated with the specific career area of aircraft maintenance.

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[5]Another comparison may be made with previous research concerning female Air Force officers. In the previous research, the proportion of Moral-Ethical orientations to the total was 42%, contrasted to 31% Pragmatic orientations (2:76). In the current research, out of seven responding female officers only one reflected a Moral-Ethical orientation against four reflecting Pragmatic orientations. However, the small number of responding female officers in this research renders this comparison questionable.

TABLE 4

PRIMARY ORIENTATIONS (%)

Primary Orientations	Current Study	Previous Air Force Studies	England Studies	
	Non-Rated Aircraft Maintenance Officers (N=208)	Air Force Officers (N=1321)	Naval Officers (N=271)	U.S. Managers (N=1071)
Affect*	--	6	1	1
Pragmatic	45	32	41	58
Moral-Ethical	34	39	47	31
Mixed	21	23	11	9

*For Navy Officers read as Traditionalistic (14:80).

The possibility of such a Pragmatic character was further explored by more detailed analysis of the data by the demographic categories of grade, command of assignment, source of commission, education, Regular/Reserve status, and age.[6] Since the purpose of this analysis was to explore a possible Pragmatic character of the career area, comparisons in this section will be made with Pragmatic proportions. Pragmatic proportion is defined as the proportion (in percentages) of Pragmatic orientations to the total of

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[6]Some of the respondents left one or more of the demographic questions blank. These omissions account for a small number of the responses not appearing in the detailed analyses. The gross totals of these analyses will therefore vary slightly from one analysis to another.

Pragmatic and Moral-Ethical orientations within a specific years of service cell or categorization group; that is, PR/(PR + ME).

Grade

Table 5 indicates the Pragmatic proportions by grade. No significant trends are indicated, other than the data reflect the years of service promotion phase points.

TABLE 5

VALUE ORIENTATIONS BY GRADE

Grade	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
2 Lt	10	11	5	52.4	26
1 Lt	12	13	4	52.0	29
Capt	31	43	21	58.1	95
Maj	15	21	11	58.7	47
Lt Col	3	4	1	57.1	8

Command

Table 6 indicates the Pragmatic proportions by command of assignment. Significant differences can be seen between some commands. However, the low numbers resulting from such detailed analysis render such comparisons questionable.

TABLE 6

VALUE ORIENTATIONS, ALL OFFICERS,
BY COMMAND OF ASSIGNMENT

Command of Assignment	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
SAC	16	18	6	52.9	40
TAC	13	18	5	58.1	36
ADC	8	6	3	42.8	17
MAC	12	12	9	50.0	33
AFSC	1	3	2	75.0	7
AFLC	2	7	0	77.8	9
ATC	4	9	4	69.2	17
AU	0	1	0	--	1
AFCS	2	0	0	--	2
Hg Cmd	1	0	2	--	3
PACAF	4	3	1	42.8	8
USAFE	6	11	5	64.7	22
AAC	0	1	3	--	4
Other	2	3	2	60.0	7

Source of Commission

Table 7 reflects the analysis of orientations by source of commission. A significant difference can be seen in the experimental data between Reserve Officer Training Corps (ROTC) and Officer Training School (OTS)

graduates in their value orientations. ROTC graduates had a greater tendency towards Pragmatic orientations than did OTS graduates. Pursuing the Pragmatic character of the maintenance field supposition, this difference may reflect a higher degree of career committment in the ROTC graduates. It is possible that when faced with the Pragmatic orientation favoring forces of the maintenance environment, more Moral-Ethical ROTC officers were "socialized" instead of attrited than were OTS officers. This possibility is suggested based on the presumption that ROTC officers may have a higher commitment to a military career than do OTS officers, on the average. Admittedly, such reasoning is tenuous but does offer a possible explanation of the behavior in the experimental data. More detailed analyses of the source of commission demographic variable proved inconclusive because of the smaller numbers of orientations involved in such analysis. These analyses are included in Appendix D.

TABLE 7

VALUE ORIENTATIONS, ALL OFFICERS,
BY SOURCE OF COMMISSION

Source of Commission	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
OTS	32	37	20	53.6	89
OCS	5	6	2	54.5	13
ROTC	25	42	15	62.7	82
AECP	6	4	2	40.0	12
Aviation Cadet	0	0	1	--	1
USAFA	2	1	2	33.3	5

Education

Table 8 reflects the analysis of orientations by education. A distinctive positive trend can be observed in the Pragmatic proportions as the level of education increases. The data were examined more closely for possible causes of this trend. Of the 71 Moral-Ethical officers, 24 held education as an operative concept; that is, the concept was indicated High Importance and Successful. Of the 94 Pragmatic officers, 52 held education as an operative concept; that is, the concept was indicated High Importance and Successful. Further, of the total 165 Moral-Ethical and Pragmatic officers, 28 indicated the concept education High Importance and Right against 69 indicating the concept High Importance and Successful. In the

experimental sample, there were thus a significantly greater number of officers that, when indicating the concept education High Importance, related the concept to the descriptor Successful than to Right. More detailed analyses of the education demographic variable is included in Appendix E.

TABLE 8

VALUE ORIENTATIONS, ALL OFFICERS, BY EDUCATION

Education	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
High School Diploma	0	1	0	--	1
Some College	3	3	1	50.0	7
College Degree	25	29	11	53.7	65
Some Graduate Work	23	29	15	55.8	67
Masters Degree	16	24	12	60.0	52
Work Beyond Masters	4	6	3	60.0	13

Regular/Reserve Status

Table 9 reflects the analysis of orientations by Regular and Reserve status. At the time of this research, a commission in the Regular component of the Air Force held important implications concerning tenure and prestige

in the service. The cause of the significant difference between the Pragmatic proportions of the Regular and Reserve officers may be directly linked with these implications. A regular commission may be an indicator of both career intent and recognition of career potential. If the aircraft maintenance career area has a character favoring Pragmatic orientations, the environmental forces of such an environment may explain the differences in the Pragmatic proportions. More detailed analyses of the experimental data relating to Regular/Reserve status is included in Appendix F

TABLE 9

VALUE ORIENTATIONS BY REGULAR/RESERVE

Type of Commission	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
Reserve	43	38	23	46.9	104
Regular	27	52	19	65.8	98

Age

Table 10 reflects the analysis of orientations by the age groups of the respondents. The inconclusive nature of this analysis resulted in more detailed analyses by each age group across years of service. Tables 11, 12, 13, 14, and 15 reflect the results of those analyses. The small numbers of each years of service cell made

specific comparison of cells taken singularly inconclusive. Therefore, the numbers of orientations were taken collectively; the data were divided into two years of service groups, 0-6 and 6-20 years of service. Analysis of the two collective groups yielded the more intriguing results of the research. Table 16 reflects the results of this analysis for the 26-30, 31-34, and 35-39 age groups. A pronounced difference between the two collective years of service groups can be seen in each of the age groups. This comparison, more than any other, supports the notion that strong Pragmatic orientation socialization has affected the aircraft maintenance field.

TABLE 10

VALUE ORIENTATIONS, ALL OFFICERS, BY AGE

Age	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
22-25	7	10	2	58.8	19
26-30	16	21	14	56.8	51
31-34	20	27	10	57.4	57
35-39	22	22	12	50.0	56
40-44	5	9	2	64.3	16
45-49	0	2	0	100.0	2

TABLE 11

VALUE ORIENTATIONS, OFFICERS AGE 22-25,
BY YEARS OF SERVICE

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0-2	5	7	2	58.3	14
2-4	2	3	0	60.0	5

TABLE 12

VALUE ORIENTATIONS, OFFICERS AGE 26-30,
BY YEARS OF SERVICE

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	2	3	2	60.0	7
2- 4	5	7	4	58.3	16
4- 6	5	3	5	37.5	13
6- 8	4	8	4	66.7	16
8-10	0	0	1	--	1

TABLE 13

VALUE ORIENTATIONS, OFFICERS AGE 31-34,
BY YEARS OF SERVICE

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	2	0	1	--	3
2- 4	2	2	0	50.0	4
4- 6	2	0	0	--	2
6- 8	2	5	1	71.4	8
8-10	10	13	5	56.5	28
10-12	1	7	2	87.5	10
12-14	1	0	1	--	2

TABLE 14

VALUE ORIENTATIONS, OFFICERS AGE 35-39,
BY YEARS OF SERVICE

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	0	1	0	--	1
2- 4	5	2	1	28.6	8
4- 6	2	0	0	--	2
6- 8	1	2	0	66.7	3
8-10	0	2	2	100.0	4
10-12	2	4	1	66.7	7
12-14	10	10	7	50.0	27
14-16	2	1	1	33.3	4

TABLE 15

VALUE ORIENTATIONS, OFFICERS AGE 40-44,
BY YEARS OF SERVICE

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
6- 8	1	0	0	--	1
12-14	1	3	0	75.0	4
14-20	3	6	2	66.7	11

TABLE 16

AGE GROUPS BY COLLECTIVE YEARS OF SERVICE

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
26-30 Age Group				
0- 6	12	13	6	52.0
6-20	4	8	10	66.7
31-34 Age Group				
0- 6	6	2	1	25.0
6-20	14	25	9	64.1
35-39 Age Group				
0- 6	7	3	1	30.0
6-20	15	19	11	55.9

The results in Table 16 indicate that the increasing trend in Pragmatic orientations as years of service increased may not have been the result of the increasing age of the respondents. In fact, the results indicate a

decreasing trend in Pragmatic orientations as age increases. It is possible that environmental "socialization" forces existed in the maintenance career area that influenced this trend. As officers entered the field, those with Moral-Ethical orientations were either "socialized" of left the field by self or group generated attrition more so than those with Pragmatic orientations. Such a supposition is supported by the results in Table 16.

However, this analysis is limited to the experimental sample, and the results cannot be inferred to the population of non-rated aircraft maintenance officers. The research methodology was structured to test a hypothesis that the Moral-Ethical proportions would increase as years of service increased. Only the failure of the experimental sample to support that hypothesis can be inferred to the population. The supposition that the aircraft maintenance career area may favor those officers with a Pragmatic orientation is offered as a possible explanation of the results.

Instrument Sensitivity and Validity

The experimental sample data were analyzed to explore the possibility that the data failed to support the research hypothesis because of weak sensitivity or questionable validity of the research instrument. Possible causes of the high number of undetermined orientations were postulated, and the impact of these causes on the data

examined. The data were further analyzed to search for logical inconsistencies that might raise questions about the validity of the instrument.

Instrument Sensitivity

The major cause of the high number of Mixed responses was the impact of Methodological Decision Rule 2; the concepts indicated High Importance in the primary orientations were equal to or less than the complementary Average and Low Importance concepts. Of the 43 Mixed responses, 35 were a result of this rule. The cause underlying this behavior of the data may have been the limited number of available relative weight responses on the questionnaire: High, Average, and Low. If a finer degree of detail for levels of importance had been available, more sensitivity might have been possible while maintaining the mediation process implied in the semantic differential logic. For example, the research instrument offered three possible choices:

High Importance ___ X ___ Low Importance

If, however, six choices were offered, more detail may have been achieved.

High Importance ___ X ___ ___ ___ ___ Low Importance

In this example, an indicating check in either of the first two spaces would be treated as High Importance. An

indicating check in the second two spaces would be treated as Average Importance. An indicating check in the last two spaces would be treated as Low Importance.

If six choices had been given the respondents, it is possible that a certain percentage of the Average Importance indications might have been changed to the lower of the High Importance indications, as in the example. This possibility is suggested based on a presumption that some respondents may have had a tendency to avoid marking "extremes." The possible impacts of finer detail in the importance indications were simulated in the experimental data by introducing varying percentages of possible changes.

The simulation consisted of taking a certain percentage of the actual Average indicated concepts and changing these to High indicated concepts. For example, one analysis was conducted by selecting 10% as the percentage. For each respondent, 10% of the concepts that were indicated Average Importance were changed to High Importance. The results were then processed using the same Methodological Decision Rules. Tables 17, 18, and 19, reflect the results of this simulation over years of service for percentages of 10%, 20%, and 30% respectively. As the tables indicate, the total number of Mixed responses were successively reduced from 43 to 10.

TABLE 17

YEARS OF SERVICE AT .1 SENSITIVITY

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	10	11	5	52.4	26
2- 4	14	14	5	50.0	33
4- 6	9	5	3	35.7	17
6- 8	8	17	4	68.0	29
8-10	11	17	6	60.7	34
10-12	3	14	1	82.4	18
12-14	15	15	3	50.0	33
14-20	6	9	2	60.0	17
Total	76	102	29	57.3	207

The results displayed in Tables 17, 18, and 19, could not be analyzed for any conclusive trends in the experimental data because the actual distributions of possible changes was unknown. However, two general conconclusions were drawn from these results. First, the results suggest that the instrument would have been more sensitive if more detail had been provided in the Importance descriptor. Secondly, the results suggest that the orientation directions found in the original results of the experimental sample would have still been present even if the instrument had been more sensitive. More detailed analyses of the simulation are included in Appendix G.

TABLE 18

YEARS OF SERVICE AT .2 SENSITIVITY

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	11	12	3	52.2	26
2- 4	14	14	5	50.0	33
4- 6	9	5	3	35.7	17
6- 8	8	19	2	70.4	29
8-10	13	19	2	59.4	34
10-12	3	14	1	82.4	18
12-14	16	15	2	48.4	33
14-20	6	9	2	60.0	17
Total	80	107	20	57.2	207

TABLE 19

YEARS OF SERVICE AT .3 SENSITIVITY

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	11	12	3	52.2	26
2- 4	14	18	1	56.2	33
4- 6	10	5	2	33.3	17
6- 8	8	20	1	71.4	29
8-10	13	20	1	60.6	34
10-12	4	14	0	77.8	18
12-14	16	15	2	48.4	33
14-20	5	12	0	70.6	17
Total	81	116	10	58.9	207

Instrument Validity

An objective examination of the research instrument's validity was extremely difficult because of the subjective nature of personal value system orientations which the instrument measures. The research design used only the one instrument, and thus cross comparisons of the experimental data with the results of another instrument were impossible. Therefore, the general approach in examining the instrument's validity was to search for logical inconsistencies within the experimental data. Two such inconsistencies were discovered, raising some question

as to the validity of the instrument. One inconsistency concerned the relationship between orientations and job satisfaction; the other inconsistency concerned a detected trend in indicated importance level of the concept "Promotion."

Orientations and Job Satisfaction

The literature search suggested that a relationship should exist between value orientations and job satisfaction. The previous analysis of the Pragmatic proportions indicated that a possible cause of the behavior in the experimental data may have been a particular character of the aircraft maintenance career area that favored Pragmatic orientations. If such was indeed the case, this Pragmatic character of the career area should also manifest itself when examining the relationship between orientations and job satisfaction. Pragmatic officers should have indicated a tendency to have higher job satisfaction than Moral-Ethical officers.

Question 6 in the demographic section of the questionnaire (Appendix B) asked the respondent to indicate how well he liked his job. The question allowed seven responses, ranging from "I hate it" to "I love it." The responses were weighted on a scale from -1 to +1; graduated by 1/3 increments. A response of "I dislike it" was thus weighted by -2/3. A job satisfaction index

was then created for each orientation group by averaging the job satisfaction weights for that group. The index for Pragmatic orientations was +.42553; the index for Moral-Ethical orientations was +.41784. Table 20 indicates the analysis of the extreme ends of the question responses to give some indication of the range of the distributions. These results suggest little difference concerning job satisfaction between Pragmatic and Moral-Ethical orientations. Such results are inconsistent with the supposition that the nature of the aircraft maintenance career area favors those officers with Pragmatic orientations. If such an orientation climate did exist, it would have been expected that this climate would have also influenced job satisfaction. This possible inconsistency was not considered conclusive, since the supposition of the Pragmatic career climate was offered only as a tentative explanation for the data results.

TABLE 20

EXTREME RESPONSE FREQUENCIES FOR
JOB SATISFACTION

Response	Moral-Ethical	Percent of Total Moral-Ethical	Pragmatic	Percent of Total Pragmatic
"Hate my job"	1	1.4	1	1.1
"Dislike my job"	4	5.6	3	3.2
"Enthusiastic about my job"	30	42.3	34	36.2
"Love my job"	8	11.3	11	11.7

Concept "Promotion"

A more conclusive question concerning the instrument's validity resulted when examining the concept "Promotion." Since the concept strongly relates to an indicator of "success" for Pragmatic officers, it was anticipated that there would be a greater proportion of Pragmatic officers holding this concept as an operative concept. That is, the concept would be indicated as High Importance and have an adjectival descriptor in the primary orientation: "successful" for Pragmatic and "right" for Moral-Ethical officers. In the experimental sample, 64.9% of Pragmatic orientations held "promotion" as an operative concept, contrasted to 36.6% of Moral-Ethical orientations holding the concept as an operative concept. However, when a detailed analysis was performed along this concept, a logical inconsistency was discovered.

Regardless of the adjectival descriptor, it was considered that there should be a tendency for a greater proportion of officers to indicate "promotion" as High Importance as the years of service cells approached the promotion phase point years. It was further expected that such a tendency would be particularly evident about the 10-12 years of service cell, the phase point cell for promotion to major. The temporary promotion to major phase point is a crucial point in an Air Force officer's career. If a Reserve officer is "passed over" twice for promotion to major, he is eliminated from the service. For a Regular officer, only the later permanent promotion board determines his eligibility to remain in the service, but the temporary promotion is a good indicator of the probable results of the permanent board. Therefore, the research expected the tendency for a greater proportion of officers to indicate "promotion" as High Importance to be especially evident about the 10-12 years of service cell. Table 21 relects the results of this analysis.

TABLE 21

PROMOTION INDICATED AS HIGH IMPORTANCE

Years of Service	Number of Moral-Ethical	Percent of Sample Moral-Ethical	Number of Pragmatic	Percent of Sample Pragmatic
0- 2	8	80.0	10	91.0
2- 4	9	64.3	9	64.0
4- 6	7	77.7	3	100.0
6- 8	3	37.5	14	93.3
8-10	6	60.0	12	75.0
10-12	3	100.0	7	58.0
12-14	9	75.0	11	85.0
14-20	4	80.0	6	77.8

For the Moral-Ethical orientations, the years of service cells immediately prior to the 10-12 cell reflect the lowest proportions of the sample indicating the concept High Importance. A more telling result is found in the Pragmatic orientations. In the Pragmatic orientations, there is actually a reverse tendency; as the cells approach the 10-12 phase point cell, consistently lower proportions of the sample indicate the concept High Importance. In fact, the 10-12 phase point cell itself has the lowest of these proportions. Intuitively, it appears reasonable that a tendency to indicate "promotion" as High Importance about the phase point cell would be strongest among the Pragmatic orientations, and yet a reverse tendency can be

observed. The results of this analysis suggest a serious question concerning the instrument's validity. This research could not postulate a logical explanation for such results, other than the suggestion that the respondents may not have indicated their true feelings, either because they were unwilling or unable to do so. If such were the case, the entire methodology of the questionnaire is subject to question since its validity depends upon its accurate reflection of the respondents' perceptions.

Further analysis of the validity of the questionnaire proved inconclusive, again because of the absence of a base for comparison. It was concluded that the instrument's validity could not be completely challenged, but that the two possible inconsistencies did raise serious questions, particularly with that concerning the concept "promotion."

Discussion of Analyses

In the analyses of the Pragmatic proportions, the behavior of the experimental data suggested the possibility that the aircraft maintenance area has a strong Pragmatic orientation through socialization, attrition, or both. Such a supposition does provide a possible explanation for the results not supporting the research hypothesis. Another possible cause for the experimental results was found when examining the research instrument's sensitivity and validity. Although the weak sensitivity of the instrument did result

in a high number of Mixed responses, the analysis suggested that this weak sensitivity may not have masked any significantly different behavior. However, two inconsistencies found in the analyses concerning instrument validity raise serious questions about the instrument's methodology. The analyses concerning the concept "promotion" resulted in the most telling of these two logical inconsistencies.

A further observation may be made in the original results of the experimental sample (Table 3). The 4-6 years of service cell has the highest Moral-Ethical proportion, while the 10-12 years of service cell has the lowest Moral-Ethical proportion. The observation concerning the 4-6 years of service cell is the more bewildering. If the aircraft maintenance career area does have a Pragmatic climate, the tendency observed in the results may be explained by the "socialization" or attrition of Moral-Ethical officers. The socialization process will most likely span years, but the attrition process may be concentrated in certain years of service zones. Although actual data of distributions were not available, the aircraft maintenance officer career monitor at AFMPC indicated that the 4-6 years of service zone held the highest number of officers voluntarily leaving the service. This fact is basically a result of opportunity; prior to four years of commissioned service, the officer is obligated to remain.

It appears logical, therefore, that the 4-6 years of service cell should reflect a "bridge" between the lesser and greater Pragmatic tendencies of the 0-4 and 6-20 years of service groups. As can be seen, it does not. For explanation, the only commonality that could be found among the officers in the 4-6 years of service cell was the presumed shared college experiences of such officers during the campus unrest years of the late 1960s. Because the 4-6 and 10-12 years of service cells were also the cells with the lowest useable response rates in the experimental sample (Table 2), further speculation appears unadvisable. Instead, the reader can refer to the supplemental data of late returned responses not included in the research for comparison of these specific cells' distributions (Appendix C). Further analyses of the 4-6 cell proved inconclusive owing to the resulting smaller numbers, but are included for interest in Appendix H.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

(1) The hypothesis that the Moral-Ethical proportions would increase as years of service increased cannot be supported by this research. Since the research methodology was structured about this hypothesis, further inferences to the population of non-rated aircraft maintenance officers are not possible. The analyses and conclusions of this research are therefore limited to the experimental sample.

(2) A possible explanation for the behavior of the experimental data may be that the aircraft maintenance career area has a particular climate that favors Pragmatic orientations. The analysis of the Pragmatic proportions in the experimental data produced results that suggested such a supposition.

(3) Logical inconsistencies were found in the experimental data that raise questions concerning the validity of the research instrument. These inconsistencies are not considered conclusive evidence of the instrument's lack of validity; however, any question of the

instrument's validity must be considered serious. Without validity, the instrument, research methodology, and results are not meaningful.

4. The instrument may have weak sensitivity. The large number of Mixed responses complicated the analysis of the experimental data. However, the analysis of the instrument's sensitivity suggested that the weak sensitivity may not have masked differences in the experimental data that would have significantly changed the general results.

5. In summation, the larger perspective of this research effort was an attempt to synthesize the theories and methodologies of differing disciplines of behavioral research. It was believed that such an approach would yield valuable insights into the research of both Janowitz and England. Although the non-support of the data for the research hypothesis prevented inferences to the population, the research has produced useable data for secondary analysis and comparison research, and has suggested fruitful areas for further research.

Recommendations for Further Research

1. The supposition that the aircraft maintenance career area may have a Pragmatic climate should be explored further. One possible approach would be to examine the rated officers serving in the aircraft maintenance field as compared to those rated officers still serving in the

AD-A032 459 AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHO--ETC F/G 5/10
PERSONAL VALUE SYSTEMS OF USAF NON-RATED AIRCRAFT MAINTENANCE O--ETC(U)
SEP 76 J P SCHLATTER, J D MITCHELL

UNCLASSIFIED SLSR-12-76B NL

2 OF 3
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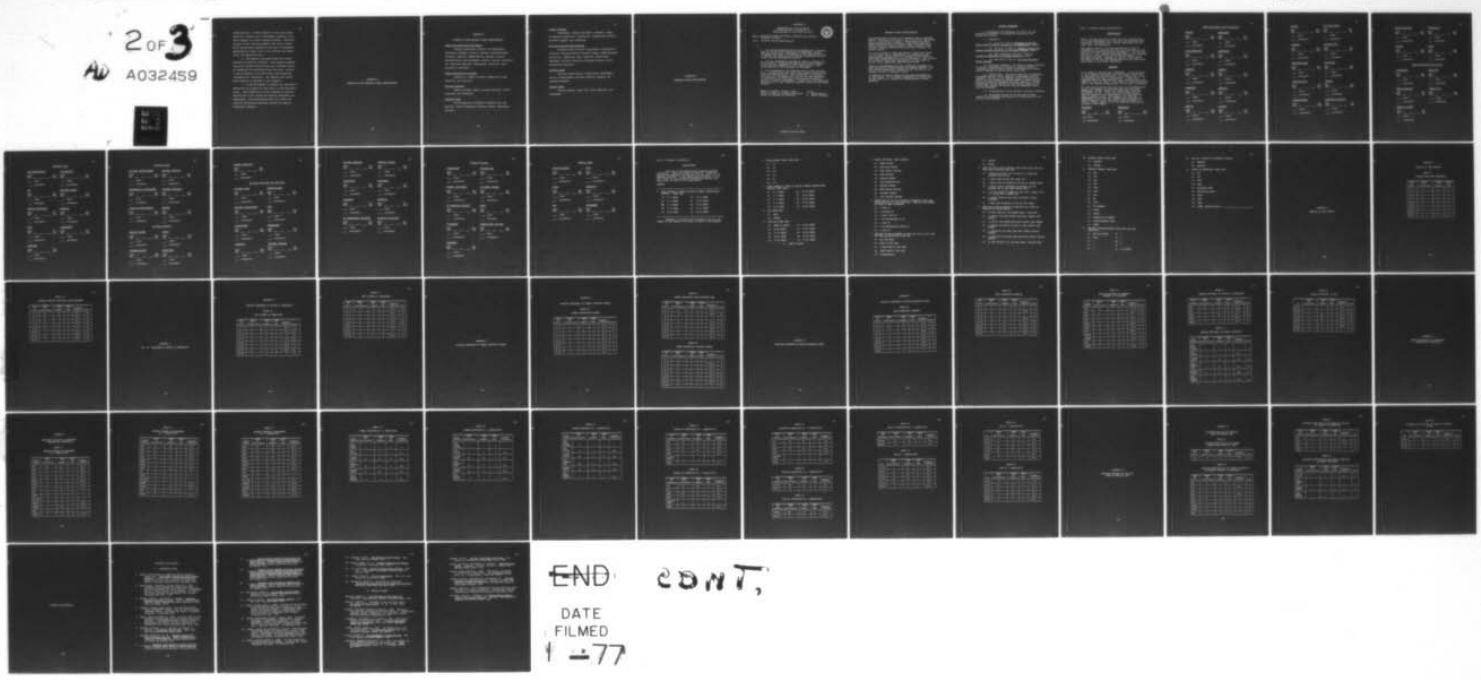

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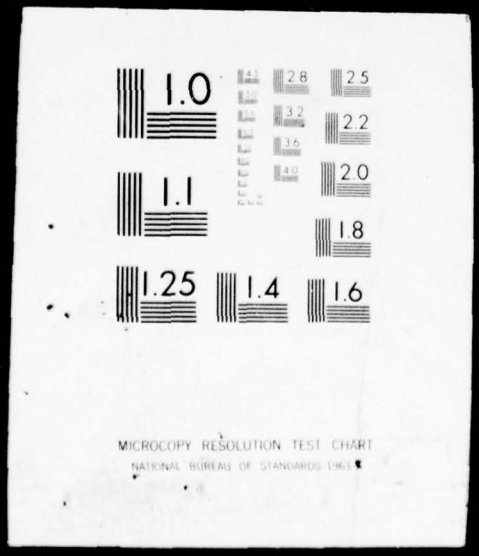

operations area. Further research in this area should definitely include level of assignment (squadron, wing, major command) as a major research variable. Janowitz's concepts of the "military manager" and "heroic leader" may be particularly relevant as the level of assignment approaches the "front line" of the aircraft maintenance field, the operational unit.

2. The research instrument should be closely examined for objective validity. This research suggests that prior research results using this instrument should be reexamined for consistency within the data. Further, it may be possible to use other such values measuring instruments for comparisons. The Rokeach Value Survey might possibly be employed in such research.

3. It may be possible to improve the instrument's sensitivity by allowing for more detail in the importance levels. This possibility could be explored by parallel applications of the current and modified instruments for comparisons. Such modification should not affect the cognitive differences observable through the semantic differential process.

APPENDIX A

CONCEPTS IN THE PERSONAL VALUES QUESTIONNAIRE

APPENDIX A

CONCEPTS IN THE PERSONAL VALUES QUESTIONNAIRE

Ideas Associated with Indivuduals

Stamina, Experience, Dignity, Self-Expression, Enthusiasm, Judgment, Maturity, Honesty, Resourcefulness, Foresight, Ambition, Responsibility, Ability, Loyalty, Aggressiveness, Self-Confidence, Caution, Courage, Individuality, Emotional Stability, Rationality, Initiative, Self-Discipline, and Trust.

Ideas Associated with Groups

Cooperation, Esprit de Corps, Competition, Human Relations, and Prejudice.

Military Concerns

Weapons Systems, Supply, Limited Conflicts, Professionalism, and Strategies.

Personal Goals

Job Satisfaction, Promotion, Prestige, Pay, Job Security, Service Reputation, Military Career, Achievement, and Rank.

Groups of People

Congressmen, Defense Department, Taxpayers, Enemy, My Immediate Supervisor, Enlisted Men, Commissioned Officers, My Parent Command, and Co-Workers.

Military Functions and Practices

Military Pride, Military Intelligence, Coordination, Logistics, Military Bearing, Personal Conduct, Respectfulness, Punctuality, Leadership, Duty, Authority, Orderliness, Challenge, Military Discipline, Military Training, and My Occupational Specialty.

Military Goals

Military Effectiveness, Technological Advancement, Mission Accomplishment, National Security, Defense, and Balanced Readiness.

General Ideas

Decision Making, Peace, War, Risk, Education, and Government.

APPENDIX B

PERSONAL VALUES QUESTIONNAIRE

APPENDIX B

DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (AU)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

REPLY TO ATTN OF: AFIT/SLGR (SLSR 12-67B/Maj Schlatter/Capt Mitchell AUTOVON 787-7769)

SUBJECT: Personal Values Questionnaire

TO:

1. The attached questionnaire was prepared by a research team at the Air Force Institute of Technology, Wright-Patterson AFB, Ohio. The purpose of the questionnaire is to examine the personal value system orientations of non-rated aircraft maintenance officers.

2. You are requested to provide an answer or comment for each question. Headquarters USAF Survey Control Number 76-140 has been assigned to this questionnaire. Your participation in this research is voluntary.

3. Your responses to the questions will be held confidential. Please remove this cover sheet before returning the completed questionnaire. Your cooperation in providing this data will be appreciated and will be very beneficial in researching the behavioral implications of personal values to logistics management. Please return the completed questionnaire in the attached envelope within one week after receipt.

HENRY W. PARLETT, Colonel, USAF
Associate Dean for Graduate Education
School of Systems and Logistics

2 Atch
1. Questionnaire
2. Return Envelope

PERSONAL VALUES QUESTIONNAIRE

This questionnaire is part of a research study of personal values. The aim of the study is to find out how individuals look at a wide range of topics. These topics are about ideas associated with individuals, ideas associated with groups, groups of people, military goals, personal goals, military functions and practices, military concerns, and general topics.

You will be asked to judge the degree to which each topic is: (1) right, and (2) successful. In completing this questionnaire, please make your judgments on the basis of what these topics mean to *you* as an individual. The *meanings* of the terms "right" and "successful" are also based on how *you* as an individual think of these terms.

Under no circumstances will your individual responses be made available to anyone except the research workers. The data we are attempting to gather are for use only in our research project on personal values.

In advance, we wish to thank you for your participation in this study. It is through cooperation in studies such as this that we all advance our understanding of human behavior.

PRIVACY STATEMENT

In accordance with paragraph 30, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

a. Authority:

(1) 10 U.S.C., 80-12, Secretary of the Air Force, Powers, Duties, Delegation by Compensation; and/or

(2) EO 93-97, 22 Nov 43, Numbering System for Federal Accounts Relating to Individual Persons; and/or

(3) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel; and/or

(4) AFR 178-9, 9 Oct 73, Air Force Military Survey Program.

b. Principal purposes. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine Uses. The survey data will be converted to information for use in research of management related problems. Results of the research, based on the data provided, will be included in written master's theses and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.

Part I: Personal Values Questionnaire

INSTRUCTIONS

First, rate how *important* a topic is to you by placing an "X" on the appropriate line: the left line signifies high importance; the middle line, average importance; and the right line, low importance.

Then specify which of the form descriptions (right or successful) *best* indicates the *meaning* of the topic to you; indicate your choice by placing the number "1" on the line next to it. Then indicate which description *least* indicates the topic's *meaning* to you by writing the number "2" in the space provided. Complete all topics in this manner and check to see that the descriptions for each topic have been ranked in the manner instructed.

EXAMPLES

As an example, take the topic EDUCATION. If you felf that it is of average importance, you would make a check mark in the middle line as indicated. If you felf that, of the two descriptions (right or successful). "right" *best* indicates what the topic means to you, you would write the number "1" next to "right." The number "2" would be written next to the remaining description, in this case "successful."

For some topics you may feel that none of the descriptions apply. For example, you may feel that, for the topic EXPERIENCE, neither "right" nor "successful" indicates the meaning to you. If you have this trouble you may begin by deciding which description *least* indicates the topic's meaning to you. For example, for the topic EXPERIENCE if you felf that "right" least indicates the topic's meaning to you, you would write the number "2" next to "right," and so on for the remaining description, as shown in the sample.

EDUCATION

High Imp. ____ X ____ ____ Low Imp.

1 right

2 successful

EXPERIENCE

High Imp. X ____ ____ ____ Low Imp.

2 right

1 successful

Ideas Associated with Individuals

STAMINA

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

EXPERIENCE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

SELF-EXPRESSION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

ENTHUSIASM

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

MATURITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

HONESTY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

FORESIGHT

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

AMBITION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

ABILITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

LOYALTY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

DIGNITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

SELF-CONFIDENCE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

JUDGMENT

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

INDIVIDUALITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

RESOURCEFULNESS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

INITIATIVE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

RESPONSIBILITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

CAUTION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

AGGRESSIVENESS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

EMOTIONAL STABILITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

SELF-DISCIPLINE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

RATIONALITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

COURAGE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

TRUST

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

Ideas Associated with Groups

COOPERATION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

PREJUDICE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

HUMAN RELATIONS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

COMPETITION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

ESPRIT DE CORPS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

Personal Goals

JOB SATISFACTION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

JOB SECURITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

PAY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

MILITARY CAREER

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

SERVICE REPUTATION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

PRESTIGE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

RANK

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

ACHIEVEMENT

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

PROMOTION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

Military Goals

MILITARY EFFECTIVENESS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

NATIONAL SECURITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

TECHNOLOGICAL ADVANCEMENT

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

BALANCED READINESS

High Imp. ____ ____ ____ Low. Imp.

____ right

____ successful

MISSION ACCOMPLISHMENT

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

DEFENSE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

Military Concerns

WEAPONS SYSTEMS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

SUPPLY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

PROFESSIONALISM

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

STRATEGIES

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

LIMITED CONFLICTS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

Military Functions and Practices

MILITARY PRIDE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

RESPECTFULNESS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

MILITARY INTELLIGENCE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

DUTY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

COORDINATION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

ORDERLINESS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

LOGISTICS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

MILITARY TRAINING

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

MILITARY BEARINGS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

PERSONAL CONDUCT

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

PUNCTUALITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

LEADERSHIP

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

CHALLENGE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

AUTHORITY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

MY OCCUPATIONAL SPECIALTY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

MILITARY DISCIPLINE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

Groups of People

CONGRESSMEN

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

ENLISTED MEN

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

DEFENSE DEPARTMENT

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

MY PARENT COMMAND

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

MY IMMEDIATE SUPERIOR

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

ENEMY

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

CO-WORKERS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

COMMISSIONED OFFICERS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

TAXPAYERS

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

General Ideas

DECISION MAKING

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

RISK

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

PEACE

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

EDUCATION

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

WAR

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

GOVERNMENT

High Imp. ____ ____ ____ Low Imp.

____ right

____ successful

Part II: Personal Information

INSTRUCTIONS

This part of the questionnaire concerns personal information. Read each question carefully, choode the appropriate response, and then mark out the *number* of the response selected. In the sample question shown, if you had 5 years of Active Federal Commissioned Service, you should mark out the "03" as shown below.

EXAMPLE

---

2. TOTAL NUMBER OF YEARS OF ACTIVE FEDERAL COMMISSIONED SERVICE. (MARK ONE):

01.	0- 2 YEARS	06.	11-12 YEARS
02.	3- 4 YEARS	07.	13-14 YEARS
■■.	5- 6 YEARS	08.	15-16 YEARS
04.	7- 8 YEARS	09.	17-18 YEARS
05.	9-10 YEARS	10.	18-20 YEARS

Remember to carefully and completely mark out the number of the response you select as shown in the example.

1. YOUR PRESENT GRADE (MARK ONE):

   01. 0-1

   02. 0-2

   03. 0-3

   04. 0-4

   05. 0-5

   06. 0-6

2. TOTAL NUMBER OF YEARS OF ACTIVE FEDERAL COMMISSIONED SERVICE (MARK ONE):

   01. 0- 2 YEARS
   02. 3- 4 YEARS
   03. 5- 6 YEARS
   04. 7- 8 YEARS
   05. 9-10 YEARS
   06. 11-12 YEARS
   07. 13-14 YEARS
   08. 15-16 YEARS
   09. 17-18 YEARS
   10. 19-20 YEARS

3. SEX (MARK ONE):

   01. MALE

   02. FEMALE

4. YOUR AGE (MARK ONE):

   01. UNDER 20 YEARS
   02. 20-21 YEARS
   03. 22-25 YEARS
   04. 26-30 YEARS
   05. 31-34 YEARS
   06. 35-39 YEARS
   07. 40-44 YEARS
   08. 45-49 YEARS
   09. 50-54 YEARS
   10. 55-59 YEARS
   11. OVER 59 YEARS

5. FORMAL EDUCATION (MARK HIGHEST):

   01. GRADE SCHOOL

   02. SOME HIGH SCHOOL

   03. HIGH SCHOOL DIPLOMA

   04. SOME COLLEGE

   05. COLLEGE DEGREE

   06. SOME GRADUATE WORK

   07. MASTERS DEGREE

   08. WORK BEYOND MASTERS

   09. DOCTORAL DEGREE

   10. POST DOCTORAL DEGREE

6. CHOOSE THE *ONE* OF THE FOLLOWING STATEMENTS WHICH BEST TELLS HOW WELL YOU LIKE YOUR JOB. MARK OUT THE NUMBER IN FRONT OF THAT STATEMENT:

   01. I HATE IT.

   02. I DISLIKE IT.

   03. I DON'T LIKE IT.

   04. I AM INDIFFERENT TO IT.

   05. I LIKE IT.

   06. I AM ENTHUSIASTIC ABOUT IT.

   07. I LOVE IT.

7. MARK ONE OF THE FOLLOWING TO SHOW *HOW MUCH OF THE TIME* YOU FEEL SATISFIED WITH YOUR JOB.

   01. ALL THE TIME.

   02. MOST OF THE TIME.

   03. A GOOD DEAL OF THE TIME.

   04. ABOUT HALF OF THE TIME.

   05. OCCASSIONALLY.

06. SELDOM.

07. NEVER.

8. MARK THE ONE OF THE FOLLOWING WHICH BEST TELLS HOW YOU FEEL ABOUT CHANGING YOUR JOB.

01. I WOULD QUIT THIS JOB AT ONCE IS I COULD GET ANYTHING ELSE TO DO.

02. I WOULD TAKE ALMOST ANY OTHER JOB.

03. I WOULD LIKE TO CHANGE MY JOB AND MY CAREER FIELD.

04. I WOULD LIKE TO EXCHANGE MY PRESENT JOB FOR ANOTHER JOB IN THE SAME CAREER FIELD.

05. I AM NOT EAGER TO CHANGE MY JOB, BUT I WOULD DO SO IF I COULD GET A BETTER JOB.

06. I CANNOT THINK OF ANY JOBS FOR WHICH I WOULD EXCHANGE.

07. I WOULD NOT EXCHANGE MY JOB FOR ANY OTHER.

9. MARK ONE OF THE FOLLOWING TO SHOW HOW YOU THINK YOU COMPARE WITH OTHER PEOPLE.

01. NO ONE LIKES HIS JOB BETTER THAN I LIKE MINE.

02. I LIKE MY JOB MUCH BETTER THAN MOST PEOPLE LIKE THEIRS.

03. I LIKE MY JOB BETTER THAN MOST PEOPLE LIKE THEIRS.

04. I LIKE MY JOB ABOUT AS WELL AS MOST PEOPLE LIKE THEIRS.

05. I DISLIKE MY JOB MORE THAN MOST PEOPLE DISLIKE THEIRS.

06. I DISLIKE MY JOB MUCH MORE THAN MOST PEOPLE DISLIKE THEIRS.

07. NO ONE DISLIKES HIS JOB MORE THAN I DISLIKE MINE.

10. MARITAL STATUS (MARK ONE):

    01. MARRIED

    02. SINGLE

11. PRESENT COMMAND (MARK ONE):

    01. SAC

    02. TAC

    03. ADC

    04. MAC

    05. AFSC

    06. AFLC

    07. ATC

    08. AU

    09. AFCS

    10. HG COMMAND

    11. PACAF

    12. USAFE

    13. ALASKAN AIR COMMAND

    14. JOINT/COMBINED STAFF

    15. OTHER

12. HOW MANY ISOLATED/REMOTE TOURS HAVE YOU HAD? (MARK ONE):

01.	NOT APPLICABLE	06.	4
02.	NONE	07.	5
03.	1	08.	6
04.	2	09.	7
05.	3	10.	8 OR MORE

13. ARE YOU A REGULAR OR RESERVE OFFICER?

    01. RESERVE

    02. REGULAR

14. SOURCE OF COMMISSION (MARK ONE):

    01. OTS

    02. OCS

    03. ROTC

    04. AECP

    05. AVIATION CADET

    06. NAVIGATION CADET

    07. USAFA

    08. USMA

    09. USNA

    10. OTHER (PLEASE SPECIFY): _____.)

APPENDIX C

RESULTS OF LATE SURVEYS

APPENDIX C

RESULTS OF LATE SURVEYS

TABLE 22

RESULTS FROM LATE RESPONSES

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed
0- 2	--	1	--
2- 4	--	1	--
4- 6	3	3	1
6- 8	--	1	--
8-10	--	1	--
10-12	--	3	2
12-14	--	--	--
14-20	--	--	--

TABLE 23

RESEARCH RESULTS INCLUDING LATE RESPONSES

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	10	12	5	54.5	27
2- 4	15	15	5	50.0	35
4- 6	12	6	6	33.3	24
6- 8	8	16	6	66.7	30
8-10	10	17	8	63.0	35
10-12	3	15	5	83.3	23
12-14	12	13	8	52.0	33
14-20	5	9	3	64.3	17

APPENDIX D

DETAILED RESPONSES BY SOURCE OF COMMISSION

APPENDIX D

DETAILED RESPONSES BY SOURCE OF COMMISSION

TABLE 24

OTS--SOURCE OF COMMISSION

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	2	4	2	66.7	8
2- 4	7	6	2	46.2	15
4- 6	4	0	0	--	4
6- 8	3	8	3	72.7	14
8-10	3	7	4	70.0	14
10-12	2	3	2	60.0	7
12-14	11	9	6	40.0	26
14-20	0	0	1	--	1

TABLE 25

ROTC--SOURCE OF COMMISSION

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	5	6	2	54.5	13
2- 4	4	5	2	55.6	11
4- 6	3	3	3	50.0	9
6- 8	5	6	2	54.5	13
8-10	6	8	4	57.1	18
10-12	1	7	0	87.5	8
12-14	1	0	0	--	1
14-20	0	7	2	100.0	9

APPENDIX E

DETAILED RESPONSES BY FORMAL EDUCATION LEVELS

APPENDIX E

DETAILED RESPONSES BY FORMAL EDUCATION LEVELS

TABLE 26

FORMAL EDUCATION--COLLEGE

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	7	7	4	50.0	18
2- 4	8	4	2	33.3	14
4- 6	3	2	1	40.0	6
6- 8	2	4	0	66.7	6
8-10	1	3	0	75.0	4
10-12	0	3	0	10.0	3
12-14	3	2	2	40.0	7
14-20	1	4	2	80.0	7

TABLE 27

FORMAL EDUCATION--SOME GRADUATE WORK

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	2	4	1	66.7	7
2- 4	5	7	2	58.3	14
4- 6	3	0	2	--	5
6- 8	4	7	1	63.6	12
8-10	4	4	5	50.0	13
10-12	1	4	1	80.0	6
12-14	3	1	3	25.0	7
14-20	1	2	0	66.7	3

TABLE 28

FORMAL EDUCATION--MASTERS DEGREE

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	1	0	0	--	1
2- 4	0	2	1	100.0	3
4- 6	2	1	1	33.3	4
6- 8	2	4	3	66.7	9
8-10	3	5	3	62.5	11
10-12	2	5	2	71.4	9
12-14	6	6	1	90.0	13
14-20	0	1	1	--	2

APPENDIX F

DETAILED RESPONSES BY REGULAR/RESERVE STATUS

APPENDIX F

DETAILED RESPONSES BY REGULAR/RESERVE STATUS

TABLE 29

TYPE COMMISSION--RESERVE

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	9	10	5	52.6	24
2- 4	12	11	5	47.8	28
4- 6	7	3	3	30.0	13
6- 8	6	7	2	53.8	15
8-10	4	4	1	50.0	9
10-12	1	1	2	50.0	4
12-14	3	2	4	40.0	9
14-20	1	0	1	--	2

TABLE 30

TYPE COMMISSION--REGULAR

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
0- 2	1	0	0	--	1
2- 4	2	2	0	50.0	4
4- 6	2	0	2	--	4
6- 8	2	8	3	80.0	13
8-10	6	11	7	64.7	24
10-12	2	11	1	84.6	14
12-14	8	11	4	58.0	23
14-20	4	9	2	69.2	15

TABLE 31

REGULAR OFFICERS, BY PRESENT COMMAND OF ASSIGNMENT

Present Command	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
SAC	9	7	1	77.8	17
TAC	4	8	1	66.7	13
ADC	3	4	0	57.1	7
MAC	3	6	6	66.7	15
AFSC	0	2	2	100.0	4
AFLC	1	6	0	85.7	7
ATC	0	4	2	100.0	6
PACAF	1	2	1	66.7	4
USAFE	4	9	4	69.2	17
AAC	0	1	1	--	2
OTHER	2	3	1	60.0	6

TABLE 32

REGULAR OFFICERS, BY SOURCE OF COMMISSION

Source of Commission	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
OTS	14	23	10	62.2	47
OCS	4	5	1	55.6	10
ROTC	5	20	6	80.0	31
AECP	2	3	0	60.0	5
USAFA	2	1	2	33.3	5

TABLE 33

REGULAR OFFICERS, BY FORMAL EDUCATION

Formal Education	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
High School Diploma	0	1	0	--	1
Some College	3	3	1	50.0	7
College Degree	5	12	3	70.6	20
Some Graduate Work	8	14	7	63.6	29
Masters Degree	8	17	6	68.0	31
Work Beyond Masters	3	5	2	62.5	10

TABLE 34

REGULAR OFFICERS, BY AGE

Age	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
22-25	1	1	0	50.0	2
26-30	2	4	4	66.7	10
31-34	8	18	8	69.2	34
35-39	12	18	5	60.0	35
40-44	4	8	2	66.7	14
45-49	0	2	0	100.0	2
50-54	0	0	0	--	0

APPENDIX G

DETAILED ANALYSIS OF INSTRUMENT SENSITIVITY SIMULATION

APPENDIX G

DETAILED ANALYSIS OF INSTRUMENT SENSITIVITY SIMULATION

TABLE 35

PRESENT COMMAND OF ASSIGNMENT AT .1 SENSITIVITY

Present Command	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
SAC	16	17	7	51.5
TAC	13	18	5	58.1
ADC	9	6	2	40.0
MAC	14	15	4	51.7
AFSC	1	4	1	80.0
AFLC	2	7	0	77.8
ATC	4	11	2	73.3
AU	0	1	0	--
AFCS	2	0	0	--
Hq Cmd	2	0	1	--
PACAF	4	3	1	42.8
USAFE	7	13	2	65.0
AAC	0	1	3	--
Other	2	5	0	71.4

TABLE 36

PRESENT COMMAND OF ASSIGNMENT
AT .2 SENSITIVITY

Present Command	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
SAC	17	18	5	51.4
TAC	13	17	6	56.7
ADC	10	7	0	41.2
MAC	15	17	1	53.1
AFSC	1	5	0	83.3
AFLC	2	7	0	77.8
ATC	4	12	1	75.0
AU	0	1	0	--
AFCS	2	0	0	--
Hq Cmd	2	0	1	--
PACAF	4	3	1	42.8
USAFE	8	13	1	61.9
AAC	0	1	3	--
Other	2	5	0	71.4

TABLE 37

PRESENT COMMAND OF ASSIGNMENT
AT .3 SENSITIVITY

Present Command	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
SAC	18	20	2	52.6
TAC	13	19	4	59.4
ADC	9	8	0	47.0
MAC	15	18	0	54.5
AFSC	1	5	0	82.3
AFLC	2	7	0	77.8
ATC	4	13	0	76.5
AU	0	1	0	--
AFCS	2	0	0	--
Hq Cmd	2	1	0	35.3
PACAF	4	3	1	42.8
USAFE	8	13	1	61.4
AAC	1	1	2	50.0
Other	2	5	0	71.4

TABLE 38

FORMAL EDUCATION AT .1 SENSITIVITY

Formal Education	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
High School Degree	0	1	0	--
Some College	3	3	1	50.0
College Degree	27	30	8	52.6
Some Graduate Work	24	34	9	58.6
Masters Degree	18	25	9	58.1
Work Beyond Masters	4	8	1	66.7

TABLE 39

FORMAL EDUCATION AT .2 SENSITIVITY

Formal Education	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
High School Diploma	0	1	0	--
Some College	3	3	1	50.0
College Degree	28	30	7	51.7
Some Graduate Work	26	37	4	58.7
Masters Degree	18	27	7	60.0
Work Beyond Masters	5	8	0	61.5

TABLE 40

FORMAL EDUCATION AT .3 SENSITIVITY

Formal Education	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
High School Diploma	0	1	0	--
Some College	2	4	1	66.7
College Degree	28	33	4	54.1
Some Graduate Work	26	38	3	57.6
Masters Degree	20	30	2	60.0
Work *Beyond* Masters	5	8	0	61.5

TABLE 41

SOURCE OF COMMISSION AT .1 SENSITIVITY

Source of Commission	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
OTS	34	41	14	54.6
OCS	6	6	1	50.0
ROTC	27	47	8	63.5
AECP	6	4	2	40.0
Aviation Cadet	0	0	1	--
USAFA	2	1	2	33.3

TABLE 42

SOURCE OF COMMISSION AT .2 SENSITIVITY

Source of Commission	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
OTS	37	44	8	54.3
OCS	6	6	1	50.0
ROTC	28	47	7	62.7
AECP	6	5	1	45.4
Aviation Cadet	0	1	0	--
USAFA	2	1	0	33.3

TABLE 43

SOURCE OF COMMISSION AT .3 SENSITIVITY

Source of Commission	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
OTS	38	46	5	54.8
OCS	5	7	1	58.3
ROTC	29	51	2	63.8
AECP	6	6	0	50.0
Aviation Cadet	0	1	0	--
USAFA	2	1	2	33.3

TABLE 44

TYPE OF COMMISSION AT .1 SENSITIVITY

Type of Commisstion	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
Reserve	47	42	15	47.2
Regular	28	57	13	67.0

TABLE 45

TYPE OF COMMISSION AT .2 SENSITIVITY

Type of Commission	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
Reserve	48	43	13	47.2
Regular	31	61	6	66.3

TABLE 46

TYPE OF COMMISSION AT .3 SENSITIVITY

Type of Commission	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
Reserve	50	49	5	49.5
Regular	30	63	5	67.7

TABLE 47

AGE AT .1 SENSITIVITY

Age	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
22-25	7	10	2	58.8
26-30	17	25	11	59.5
31-34	20	29	8	59.2
35-39	25	25	6	50.0
40-44	6	9	1	60.0
45-49	0	2	0	100.0

TABLE 48

AGE AT .2 SENSITIVITY

Age	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
22-25	8	9	2	51.9
26-30	17	26	10	60.5
31-34	22	32	3	59.2
35-39	26	27	3	50.9
40-44	6	9	1	60.0
45-49	0	2	0	100.0

TABLE 49

AGE AT .3 SENSITIVITY

Age	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion
22-25	8	9	2	52.9
26-30	19	30	4	61.2
31-34	21	33	3	61.1
35-39	27	28	1	50.9
40-44	5	11	0	68.8
45-49	0	2	0	100.0

APPENDIX H

DETAILED ANALYSIS OF FOUR-SIX YEARS OF SERVICE CELL

APPENDIX H

DETAILED ANALYSIS OF FOUR-SIX YEARS OF SERVICE CELL

TABLE 50

OFFICERS WITH FOUR TO SIX YEARS COMMISSIONED SERVICE, BASIC

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
4-6	9	3	5	75.0	17

TABLE 51

OFFICERS WITH FOUR TO SIX YEARS OF SERVICE, BY PRESENT COMMAND OF ASSIGNMENT

Years of Service	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
SAC	0	1	1	--	2
TAC	1	1	0	50.0	2
ADC	1	0	0	--	1
MAC	3	1	1	25.0	5
ATC	0	0	1	--	1
AFCS	1	0	0	--	1
PACAF	2	0	0	--	2
USAFE	1	0	1	--	2
AAC	0	0	1	--	1

TABLE 52

OFFICERS WITH FOUR TO SIX YEARS OF SERVICE,
BY SOURCE OF COMMISSION

Source of Commission	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
OTS	4	0	0	--	4
ROTC	3	3	3	50.0	9
AECP	2	0	0	--	2
USAFA	0	0	2	--	2

TABLE 53

OFFICERS WITH FOUR TO SIX YEARS OF SERVICE,
BY FORMAL EDUCATION

Formal Education	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
College Degree	3	2	1	40.0	6
Some Graduate Work	3	0	1	--	4
Masters Degree	2	1	1	33.3	4
Work Beyond Masters	1	0	1	--	2

TABLE 54

OFFICERS WITH FOUR TO SIX YEARS OF SERVICE, BY AGE

Age	Number of Moral-Ethical	Number of Pragmatic	Number of Mixed	Pragmatic Proportion	Total
26-30	5	3	5	37.5	13
31-34	2	0	0	--	2
34-39	2	0	0	--	2

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AD-A032 459 AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHO--ETC F/G 5/10
PERSONAL VALUE SYSTEMS OF USAF NON-RATED AIRCRAFT MAINTENANCE O--ETC(U)
SEP 76 J P SCHLATTER, J D MITCHELL

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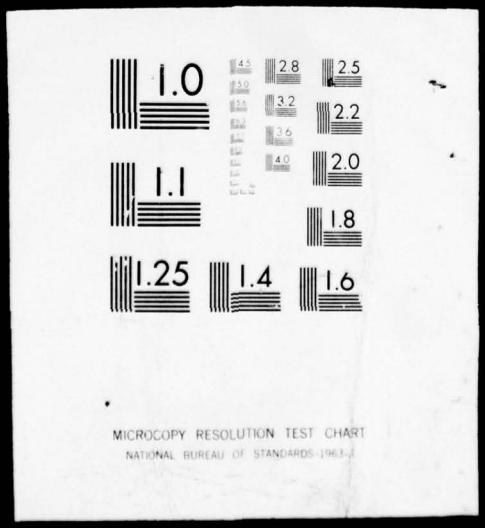

SUPPLEMENTARY

INFORMATION

The other criteria test was a subjective analysis of the data for trends. This criteria test was deemed necessary because the regression coefficient could mask unusual or anomalous behavior in the data. Therefore, for the research hypothesis to be supported, the sample data had to indicate, according to the subjective judgment of the researchers, a discernible positive association between years of commissioned service and percentages of Moral-Ethical orientations.

AD-A032459

Identification and Definition of Variables

The following operational definitions were assigned to the variables to this research.

1. Non-rated aircraft maintenance officers: A USAF commissioned officer, with less than 20 years of service, who does not possess an aeronautical rating and who possesses both a PAFSC and a DAFSC of any of the following AFSCs: 402X, 401X, 404X, 403X, and 409X (including all prefixes and suffixes).

2. Years of service: The number of years of total active federal commissioned service, determined by the officer's TAFCSD.

3. Concepts: Systematically selected words whose meanings are related to an officer's values associated with his profession as an Air Force officer.