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FOUR YEARS OF SEX INTEGRATION  
AT THE UNITED STATES AIR FORCE ACADEMY:  
PROBLEMS AND ISSUES

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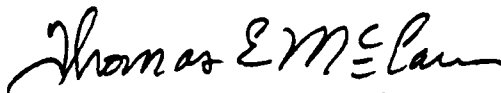
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A handwritten signature in cursive script, reading "Thomas E. McCann". The signature is written in dark ink and is positioned above the printed name and title.

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PROBLEMS AND ISSUES

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This report was completed before the end of 1981. The delay in publication is regrettable, but must be taken into account when evaluating the conclusions drawn within. These conclusions are based on the data available in late 1980 and reasonable projections from the data and other research sources cited here.

Perhaps most important and most sensitive are the concerns about the career attrition of women graduates. Research is now underway at both the Air Force Academy and Military Personnel Center to determine what exactly is transpiring among the graduates of the Class of 1980. This report will serve as the foundation for that research, and we at the Academy have every intention to relate current career information to the broad data base on attitudes and aspirations from this first gender integrated class.

This report and the current research effort represent a continuing concern by the Air Force and the Academy in the social process of gender integration and managing the integration process with sensitivity to individual member needs and the overall effectiveness of the Air Force.

31 August 1985

William P. Marshak

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A Longitudinal Study of the USAF Academy  
Class of 1980

This report contains the results of analyses of survey data collected over a four year period from the class of 1980 at the U.S. Air Force Academy. Information was gathered using questionnaires administered each year to the same sample of male and female cadets. Some analyses were completed using available information at earlier points in time and these results have been discussed in the interim project reports as well as published articles, papers and conference presentations. This information will not be presented again. Instead, the primary emphasis will be the trends and changes in variables over time.

This report will be organized around the several principal research areas which formed the nucleus of the project. These areas include an assessment of the sex-integration process over time, a monitoring of changes in cadet career and family plans, measurement of a number of social-psychological variables over time and some comparisons of Academy experiences of male and female cadets. Each of these general topics will be discussed in detail in the following chapters but, first an overview of the study and the cadet sample will be presented.

Background of the Research Project

A significant event in the changing roles of women in the military was the opening of service academies to both sexes in 1976. Although academies produce only a small portion of newly commissioned officers, they have been the primary source for career officers and policy makers of the services.

Since, in the past, academy graduates made more long-term commitments to the military than most other officers. The academies also have been regarded as key military institutions that embody core military traditions. It is because of these factors that sex integration of academies was a much heralded event. Accompanying sex integration was a great deal of public as well as research interest. It was in this context, the service academies initiated studies of female cadets and the sex-integration process. As part of this endeavor, the Air Force Academy decided to recruit a female sociologist to work with their Department of Behavioral Sciences in a research and teaching capacity. The principal investigator, Lois DeFleur, was hired in this role and spent a year at the Academy in 1976-77. One of the primary tasks during this period was the design and initiation of the present project in collaboration with Air Force personnel.

In order to complete the project, funding was requested from AFOSR and a research contract was negotiated for the last two years of the four year study. Academy personnel arranged the administration of questionnaires throughout the research and until the last year of the project, they also maintained computer data files. These were recently transferred to Washington State University where the principal investigator organized and cleaned up these files for analysis of data over time. The last questionnaires were added to the file only about nine weeks before the termination of the project so the last few weeks were spent analyzing as much information as possible. However, it was necessary to set priorities, and, as will be clear in the following report, the focus is on trends and changes in the segment of the cadet sample which completed four years at the Academy and not those who left at some time prior to graduation. Additional details concerning the sample and study design will clarify the general nature of the project.

## Study Design

The present project is a panel study designed to probe aspects of sex integration and other topics at different points in time during the four-year period cadets spend at the Academy. Most of the initial interest was focused on female cadets, but it was decided that a comparative group of male cadets also was needed to the study. Since the Academy is a very distinctive setting, it would have been desirable to study a comparable sample of young men and women attending a civilian college but this was not feasible. However, there are some existing studies of college youth, as well as other service academy attendees, which in some cases can be used for comparative purposes. These will be helpful, but the specific characteristics of this military setting and its participants must be kept in mind throughout the discussion of results.

To obtain data throughout the four-year training sequence it was decided that questionnaires would be administered at least once a year. Since the first and last years are regarded as very significant in cadet training, questionnaires were given at two points in time during these years. Thus, cadets in the class of 1980 filled out six questionnaires for this project during their Academy training. The specific times these were given to the sample are listed below.

### Questionnaire Schedule

1976-77	
December	May
1977-78	
December	
1978-79	
January	
1979-80	
December	May

A related issue in a study such as this is the sequencing of variable measurement. In other words, once there is a clear idea of issues under study and key concepts, then it is essential to plan the measurement process. In this case, it was decided that to maximize the number of variables which could be included, as well as to avoid some effects of repetitive measurement, the six questionnaires would not be identical. Operationally, a list of study variables was generated during project planning and a tentative timetable for inclusion in specific questionnaires was formulated. In order to obtain indicators of trends or changes in variables, each was measured at least twice and some three times.

Decisions concerning the timetable for inclusion of variables were based on several criteria. The sequencing of Academy training affected the timing. For example, questions concerning career field choices were not included until the last two years when cadets realistically were facing such decisions. In addition, theoretical insights from prior research studies provided hypotheses concerning some research issues such as sex integration and career development which were used as guides for thinking about the Academy situation and thus the sequencing of variables. For example, changes in attitudes and beliefs concerning minorities in social situations typically undergo more change during early phases of integration so it was decided to include several of the attitude scales in early questionnaires and then again in the last year. In essence, the measurement of specific variables was staggered over the time frame of the study. Since there are a substantial number of variables measured at different times, specific details concerning their indicators and time sequencing will be discussed in relevant chapters.

TABLE 3

## FAMILY SOCIOECONOMIC CHARACTERISTICS

<u>Fathers Occupation</u>	<u>Males</u> <u>%</u>	<u>Females</u> <u>%</u>	<u>Chi-squared</u> <u>Statistic</u>
Professional	14.8	25.6	$x^2=4.99$
Manager	47.4	41.3	df=3
Skilled	31.1	25.6	p=.171
Unskilled	6.7	7.4	
<u>Fathers Education</u>			
Graduate School	18.7	34.7	$x^2=11.29$
College	51.8	49.2	df=2
High School or Less	29.5	16.1	p=.003
<u>Mothers Occupation</u>			
Professional	12.8	33.7	$x^2=14.01$
Manager	14.9	4.8	df=4
Skilled	30.9	24.1	p=.007
Unskilled	4.3	4.8	
Never Employed	37.2	32.5	
<u>Mothers Education</u>			
Graduate School	8.6	17.0	$x^2=8.048$
College	50.7	57.1	df=2
High School or Less	40.7	25.9	p=.017
<u>Family Income</u>			
19,999 or Less	51.1	41.6	$x^2=2.249$
20,000 to 29,999	32.8	38.9	df=2
30,000 or More	16.1	19.5	p=.32

TABLE 2  
HIGH SCHOOL ACTIVITIES

<u>Academic</u>	<u>Males</u>	<u>Females</u>
Academic Composite Score (* scores)	3054.0	3152.0
National Honor Society	56.9%	78.6%
Valedictorians	7.1	12.1
<u>Athletic</u>		
Team Captains (1 or more sports)	29.3	28.7
Letter Winners (1 or more sports)	78.9	55.4
<u>Leadership</u>		
Class President	11.2	4.5
Publication Editor or Business Manager	5.3	14.9
Boys/Girls State	19.1	10.8
<u>Military</u>		
Civil Air Patrol	5.9	4.5
Junior ROTC	11.2	6.6

TABLE 1  
SAMPLE SIZE AT VARIOUS TIMES IN STUDY

<u>Year of Study</u>	<u>Females</u>	<u>Males</u>	<u>Total</u>
Year One	134	152	286
Questionnaire A	134	152	286
B	111	135	245
Year Two	114	135	249
Questionnaire A	100	115	215
Year Three	94	104	198
Questionnaire A	88	96	184
Year Four	93	100	193
Questionnaire A	90	100	190
B	85	93	178

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environment not only because of their sex but also because of their race and ethnicity as well as socio-economic status. In turn, we know that factors such as class and race are correlated with different constellations of attitudes and beliefs which means cadets may respond differently to the academy environment because of their initial orientations. While it is impossible to test for the impact of these differences, they are factors which should be kept in mind as we examine cadet experiences during their four years of training. It may be that in subsequent classes the social backgrounds of males and females will become more similar and such data should be monitored over time. However, we will turn in the next chapter to information concerning changes in the sex-integration process as viewed by males and females at several points in time during their four years at the Academy.

ascertain the reasons for some of these differences in young men and women recruited to different academies but we would note that these characteristics may be significant in the adaptation of cadets to their Academy experiences including sex integration. Many more female cadets have mothers and fathers employed in professional occupations and their parents have a higher educational level than parents of male cadets. In general, these female cadets share characteristics with other young women who are regarded as role innovators in fields such as law, medicine, and engineering. That is, a larger number of young women entering these fields compared to traditionally female fields tend to come from families with college-educated parents and particularly mothers. Thus, these young women not only differ in some background characteristics from their male classmates but also from a substantial number of female college students.

It is also interesting to note that reports on the first sex-integrated class at West Point indicate some differences in backgrounds of male and female cadets but not nearly as many as in this sample at the Air Force Academy. For example, West Point data show that both sexes have similar socio-economic origins and that in fact the mothers of female cadets are in relatively lower-status occupations than mothers of male cadets. In addition, there are no differences in mothers' or fathers' educational levels (Vitters and Kinzer, 1977). It is difficult to ascertain the reasons for some of these differences in young men and women recruited to different academies but we would note that these characteristics may be significant in the adaptation of cadets to their academy experiences.

At the Air Force Academy differences in background characteristics between the sexes mean that female cadets are distinctive in the Academy

women tend to come from smaller communities and more often tend to be middle children in their families. It is also interesting that a higher proportion of these young women, compared to the men, are members of racial or ethnic minorities (see Table 6). In addition, females come from slightly higher socio-economic levels compared to males (see Table 3). Many more female cadets have mothers and fathers employed in professional occupations and their parents have a higher educational level than parents of male cadets.

These differences show that not only are female cadets distinctive in the Academy environment because of their sex, but also they have other social characteristics which set them apart from many males. At least in the class of 1980, female cadets occupy minority status in three areas. These characteristics may have an impact on the differences in attitudes and beliefs of males and females. Even though it is not possible to test the impact of these differences it is a factor which should be kept in mind and followed-up in subsequent cadet classes. It may be that over time the social backgrounds of young men and women entering the Air Force Academy will become more similar but in the meantime this situation provides the basis for differing cadet orientations.

Finally, it is interesting to note that reports from the first sex-integrated class at West Point indicate some differences in backgrounds of male and female cadets but not nearly as many as we found in this sample at the Air Force Academy. For example, West Point data show that both sexes have similar socio-economic origins and that in fact the mothers of female cadets were in relatively lower-status occupations than mothers of male cadets. In addition, there were no differences in mothers' or fathers' educational levels (Vitters and Kinzer, 1977). It is difficult to

professional occupations and one-third in skilled jobs. The combined incomes of parents are between \$15,000 and \$25,000 and the educational level is relatively high with one-half of parents having completed college. In general, these families tend to be intact with 80 percent of cadets indicating that both parents are in the home.

Cadets are recruited from all regions of the United States (Table 4). Of course, this is largely determined by official policy since members of congress make appointments to academies. The data concerning size of community where these youth lived most of the time prior to the Academy indicates that most are from small and medium sized cities. In terms of religious and racial characteristics, this sample tends to be primarily Protestant and overwhelmingly white. As we indicated earlier, most cadets come from families where there have been military service with over one-third having a parent who pursued a military career. Since parents are significant in the transmission of occupational orientations, it isn't surprising that most of these young people have backgrounds which provided varying degrees of familiarity with military organizations. In general, then, this sample of cadets is primarily from middle America and there is no reason to assume that it is vastly different from the general population of Air Force Academy cadets.

Comparisons of males and females attending service academies is of particular interest because studies have shown that women who enter atypical or nontraditional fields, such as the military, tend to have somewhat different socio-demographic backgrounds than females entering other occupational fields and males already in male-dominated fields (Trigg and Perlman, 1976). Through an examination of Tables 3-6 we see that there are a number of differences between male and female cadets. In general, the

Junior ROTC, and had earned letters in athletic events. Even though these young women had rather extensive prior athletic experiences, few of them were involved in the traditional male sports of football or basketball but instead were active in track and swimming. Basically, the young women entering the Academy did not have as much prior experience in military and athletic endeavors as men which was reflected in much of the early training and interaction at the Academy.

The next tables report a variety of socio-demographic data for this sample which was obtained from the general information questionnaires cadets complete in their first few days at the Academy. Data were obtained from the Academy Office of Institutional Research and information was not available for over twenty cadets in this sample. Thus, in Tables 3 through 6 data are reported for 264 of the original 286 sample members. The information includes a number of family characteristics, geographical origins of cadets as well as cadet religious and racial characteristics. Through an examination of these data, it is possible to gain insights concerning the social origins of future military leaders and possible differences between the backgrounds of males and females. First, however, we will turn to an examination of the general social characteristics of the sample.

In a recent study of the origins of military leaders, Janowitz (1971) reported a shift away from higher socio-economic backgrounds to more middle class. This was particularly true for the Air Force with officers coming from almost all regions and social strata in the United States. As we see on Table 3, both male and female cadets at the Air Force Academy are from primarily middle and upper-middle class backgrounds. Close to one-half of cadet parents are in managerial positions, approximately one-fifth are in

## Background Characteristics of Cadets

Past data from the U.S. Air Force Academy, as well as other service academies, indicates that young people choosing this educational and military experience are drawn from somewhat atypical backgrounds compared to a cross-section of college students. With the admission of women, several additional questions arise. What are the characteristics of young women who select such a male-dominated field, and are men and women attending the Academy similar or different? Information presented in this section will provide some answers to these questions.

Since the programmatic emphasis at the Air Force and other academies is multifaceted they try to recruit young people who are more than academically qualified. Service academies are interested in leadership experience as well as physical and athletic capabilities. Data from the Air Force Academy's registrar's office summarized on Table 2 shows the range of past experiences of cadets in the class of 1980. As is clear, these young people are academically qualified and have been active in a variety of fields.

There are sex-linked differences in these data which reflect many of the sex-linked activities in the school systems in the American society. In the class of 1980, men score somewhat lower academically than women. The academic composite combining CEEB and ACT totals as well as prior academic record indicate the average female entrance score is somewhat higher than the average male score.

Other information on this table illustrates additional sex-linked differences. More males than females were class presidents, had participated in military preparatory organizations such as Civil Air Patrol and

rate was comparable to the class as a whole. Thus, the sample size became almost a third smaller because of Academy attrition. In addition, at each questionnaire administration some members of the sample were missing. Cadets were unavailable for a variety of reasons, but for each administration over 90% of the possible respondents provided information. Table 1 summarizes the sample size over the four year period. In the rows for each year of training, the figures represent the number of cadets still enrolled in the academy. Figures for the questionnaires each year provide an indication of the number of cadets who completed a particular questionnaire. However, there is also the problem of missing data from individual questionnaires, so in specific analyses sample sizes may vary somewhat from the figures on Table 1.

An additional point must be made concerning the analyses reported in the following chapters--they use only cadets who completed the four years of training. Thus, for most of these sample size varies between 170 and 180. The basic emphasis in this report is the trends occurring during Academy training. A few comparisons are made between cadets who completed training and those who left and these will be reported where appropriate.

A follow up of the 93 cadets who left the Academy was undertaken during the last year of the study. Permanent addresses for these cadets were obtained from the Academy and with considerable effort approximately 85% were located. These former cadets were then sent short questionnaires and close to 80% returned them. These data were obtained during the summer of 1980 and since project funding terminated in September 1980, it was not possible to analyze this information. Priorities were established for data analysis and as stated the primary goal is on information from cadets who completed Academy training. However, before turning to these results, some socio-demographic characteristics of the sample will be presented.

sample of male cadets from the first integrated class should be selected. The goal was to select close to 200 from the approximately 1400 young men in the class and two general guidelines were used. Available information from the Academy indicated that young women in the 1976 entering class had slightly higher academic scores than young men. Thus, in selecting males, one goal was to obtain a sample generally comparable to women in terms of composite academic scores. A second criterion which was deemed important in this setting was family military heritage and the sample of young men was selected so that the proportion who came from families with prior military experience was similar to the female sample. In fact, a significant proportion of the sample (88%) have family members who either pursued a military career or had some prior military experience.

The final sample included 134 females and 152 males who were broadly matched in terms of academic and military background. This sample was selected at the end of the initial military training which takes place in the summer prior to fall academic coursework. The selection was made at this time because there is always a certain amount of early attrition during the first few weeks of Academy training. Approximately twenty young women left during this time as did a similar proportion of young men. Several short questionnaires were administered during the early military training sessions and some of this information will be used in conjunction with project data but as was indicated, the first questionnaire for this study was not given until cadets had been at the Academy for approximately five months.

A certain number of cadets always leave service academies without completing training and we expected some loss in the sample over the four year period. Indeed, some cadets in the sample left, but the attrition



study. It is not always easy to deal with such problems which is why it is difficult to use panel designs with large samples of the general population. It is easier to use this design with well-defined, less representative samples which in turn pose problems for generalization of results. In the present setting, the use of a panel design was facilitated by the control the institution has over its members, but, of course, it does not represent a very specialized setting.

Perhaps a more serious problem with repeated surveys of a sample is that respondents may become overly sensitized to the issues under study. They may try to become more informed about research issues after they have been asked about them, and, in fact, may want to help the researcher by trying to answer in ways they think would be most desirable. The other side of this issue is that respondents may become sensitized to issues but increasingly hostile about their role in the study and may deliberately mismark answers.

In the present study, it was decided that the advantages of being able to trace changes over time in the same sample outweighed potential problems. However, this is a matter of judgment and as such must be taken into account by the reader. Indeed, some of the problems discussed above were experienced but one of them were regarded as serious enough to challenge the general result of this study.

#### The Sample

The number of young women entering the academy was relatively small (approximately 150) which necessitated including all of them in the sample. To obtain a comparable group of men it was decided that a broadly matched

There are both advantages and limitations to the type of panel research design used in this project (Bachman et al., 1978). The advantages center around being able to question the same respondents repeatedly over a period of years. For example, if there are changes in attitudes or reported behavior this research design makes it easier to argue that there have been real changes in these variables. A panel design is preferable for these purposes as compared to trend analyses based upon several independent cross-sectional surveys given to different samples of the same population over a period of time. In the latter case, it is possible that differences over time can be attributed to either real changes in variables in the population under study or to sampling error because even though samples are drawn from the same population there can be differences due to fluctuations in sample composition.

Another advantage of a panel design is that it enables a researcher to obtain more information about sample members than would be feasible with only one measurement of a respondent. Also, sample members are traced over time with some form of identification, which often facilitates obtaining additional information from records or files. In this case, cadet identification number was used as respondent number which allowed us to obtain additional information from Academy data files.

There are, of course, disadvantages in using a panel design. One problem is that it takes a lot of time and energy to collect data over a period of years from the same respondents. It is essential to find the same respondents during the course of the study and to account for those who are not located. It is also necessary to have sufficient knowledge of the population in order to plan for sample mortality and select a sufficiently large sample so that it also will be adequate at the end of the

TABLE 4  
GEOGRAPHICAL ORIGINS

<u>Region</u>	<u>Males</u> <u>%</u>	<u>Females</u> <u>%</u>	<u>Chi-squared</u> <u>Statistic</u>
New England & Mid-Atlantic	23.5	13.2	$\chi^2=5.15$ $df=4$ $p=.272$
Central States	23.5	26.3	
South Atlantic	11.0	9.6	
South Central	17.6	19.3	
Mountain & Pacific	24.3	31.6	
<u>Town Size</u>			
Rural	5.0	13.4	$\chi^2=9.34$ $df=4$ $p=.05$
Town Less Than 25,000	10.1	11.8	
Small City (2,500 to 50,000)	38.8	42.9	
City from 50,000 to 1,000,000	36.0	22.7	
City Larger Than 1,000,000	10.0	9.2	

TABLE 5  
FAMILY CHARACTERISTICS

<u>Birth Order of Cadet</u>	<u>Males %</u>	<u>Females %</u>	<u>Chi-squared Statistic</u>
Only or Oldest	46.1	27.9	$\chi^2=9.63$
Youngest	17.0	19.7	df=2
Middle	36.9	52.5	p=.008
<u>Parental Status</u>			
Family Intact	80.9	83.6	$\chi^2=.19$
Family Not Intact	19.1	16.4	p=.66

TABLE 6  
RELIGIOUS AND RACIAL CHARACTERISTICS

<u>Religion</u>	<u>Males %</u>	<u>Females %</u>	<u>Chi-squared Statistic</u>
Protestant	48.6	60.3	$\chi^2=4.38$
Catholic	40.7	33.9	df=2
Other	10.7	5.8	p=.11
<u>Race</u>			
Black	2.8	4.1	$\chi^2=5.24$
Other NonWhite*	2.8	9.0	df=2
White	94.4	86.9	p=.07

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\*Hispanic, Indian, Asian

## Four Years of Sex Integration: Changing Beliefs, Attitudes and Interactions

This chapter will focus on the sex-integration process over time at the U.S. Air Force Academy. Information concerning interpersonal relationships, attitudes and perceptions will be used to obtain insights about this process. During a four year period, a variety of reports were obtained from cadets including questions concerning their evaluations of different situations and activities at the Academy and their self-reports of attitudes and beliefs. These materials will be organized around the following issues:

1. Are there similarities and/or differences in male and female beliefs about sex integration; attitudes toward changing roles for women and different types of interaction with the opposite sex?
2. Have there been any changes in these beliefs, attitudes and interactions over time?
3. Are there relationships between intensities of attitudes and levels of interaction over time?
4. What are the trends and implications from these data?

However, before presenting details concerning the variables under investigation and analyses of data; some prior research on females and other minorities in military organizations will be reviewed as background for the issues under study.

## The Military and Minorities

Minorities in the military became a salient issue when black male soldiers were integrated into white companies during World War II. Social scientists studied this process as well as the continuing integration during both the Korean and Vietnam conflicts. Results from these research projects indicate that during the last 35 years the military has been transformed from one of the most segregated social institutions into one of the most integrated in the American society. This process has not been without problems but nonetheless remarkable changes have taken place in military groups with relatively little stress. Based upon these experiences, some observers speculated that the integration of women would proceed along similar lines. However, it is only within the last 5 years that substantial research information has become available on some of the issues and problems of sex integration.

The earlier studies of male minorities in the military covered a wide range of topics from recruitment and performance of minorities to attitudes and beliefs about minority participation. In terms of material most relevant to the present study, the dynamics of intergroup relations between black and white servicemen will be reviewed. In one of the first studies of blacks in combat units during World War II, soldiers cooperated with each other in military activities and as a result attitudes became more favorable as contact between groups increased (Stouffer et al., 1949). In 1966, Moskos reported results from studies of racial integration in the Korean War. By this time integration of military units had become standard and again there was an increase in favorable attitudes toward minorities with very few tensions between black and white soldiers working together.

However, Moskos spelled out significant factors which had to be taken into account in order to understand these attitudes and interactions. In essence, those who had more contact with minorities were more favorable if the contact involved equal status individuals engaged in cooperative and meaningful tasks.

In a more recent article, Moskos (1971) emphasized again increased acceptance of blacks and other minority males in military roles but points out that most favorable conditions for this have been actual combat with close living, clear-cut goals, and common dangers. Given these findings, we might expect that as men have more contact with females in military roles, their attitudes will become more favorable and accepting. However, it is important to investigate the type of contact between males and females and recognize that combat experiences, which were conducive to acceptance of minority males, are closed to females. For these and other reasons the acceptance of women undoubtedly will proceed more slowly and involve different types of problems.

Approximately 15 years ago, Coates and Pellegrin (1965) assessed the past and future roles of women in the military. After reviewing the historical participation of women and some of the problems they encountered, the authors conclude that while women made significant contributions to past military activities, real "obstacles" to their widespread participation still exist. A significant obstacle is negative attitudes toward women in the military in the country as a whole, and particularly within the armed forces.

Another obstacle Coates and Pellegrin discuss is the lack of clear-cut roles and careers for military women. While most rank and occupational limitations have recently been removed there are still some remaining



barriers. A significant issue still is the nature of long-term roles for women in a full range of career fields given current restrictions on combat roles. In the present analysis we will probe attitudes toward women in a variety of military leadership roles.

More recently Safilios-Rothschild (1978) observed interaction of male and female Coast Guard cadets in sea-training situations. She found strong resistance to full-fledged acceptance of females in a variety of roles on the ship. In general, male officers and cadets tended to explain away the good performance of females by falling back on their basic beliefs and attitudes regarding "biological limitations" of women and limitations imposed by their "inherent nature". They also subscribed to what could be labelled negative and stereotypic attitudes regarding women and their abilities; and when, in fact, women performed well, males utilized "denial mechanisms" to neutralize this performance. Safilios-Rothschild concluded by predicting that women in service academies, and the armed forces generally, will not be able to achieve their full potential until many deep-rooted and powerful attitudes and stereotypes which operate to neutralize their achievements are eliminated. She also predicts that progress toward such goals will be difficult as long as the present 10% ceiling for women in the academies is in effect (see also Kanter, 1977).

Additional relevant information concerning sex integration at the Air Force Academy is found in several reports from the U.S. Military Academy at West Point (Adams, 1979). These studies have used several of the same, or comparable, instruments as the present study. In terms of cadet attitudes at West Point, men in each recent entering class were increasingly less traditional concerning changing societal and military roles for women. However, significant differences between male and female attitudes persist

and, in general, male cadets are less positive concerning changing roles compared to other Army personnel and comparable college populations.

The above studies point to several salient issues of sex integration in the military and specifically at service academies. Basically, it is essential to understand the characteristics of the interactive situation and the nature and depth of beliefs and attitudes of participants.

### The Measurement of Variables

The data analyzed in the present chapter are varied in content and format. For example, cadet attitudes toward a variety of changing roles for women were measured through the use of several attitudes scales administered to the sample more than once. Beliefs about sex integration, treatment of males and females, and other issues, were measured through a number of separate questionnaire items. Some of these were asked several times and some only once. Cadets also were asked both early and late in their training to estimate the proportion of time spent with each sex in a variety of interactive situations. The following paragraphs provide descriptions of attitude scales and interaction measures, but specific belief items will be described as the data are presented.

To measure attitudes toward changing roles for women, four scales were used. One was the short form of the Spence-Helmreich Attitudes Toward Women Scale (Spence et al., 1973) which has been used with many different samples of the general population. This is a Likert-type scale containing 25 statements about various rights and roles for women. The items tap attitudes toward women's roles in work, education, sexual activity, dating and family behavior. The scores range from 0 to 75 with lower scores representing more traditional attitudes and higher scores less traditional.

Two short scales were constructed from factor analysis of a prior questionnaire administered to a sample of cadets at the Air Force Academy. One scale consisted of four questions which measure attitudes toward women at the Academy and the other contains five questions which measure attitudes toward women in military leadership and combat roles. These were administered to the sample at several points in time and the scores range from -4 to +4 with higher negative scores representing less traditional views.

Another scale used was the "Women as Managers" Scale (Terborg et al., 1977). This measures the existence of sex-role stereotypes which are particularly relevant to women occupying management positions and consists of 21 items which probe the extent to which respondents are willing to subscribe to sex-linked traits and behaviors which could function as barriers to women in management. For example, items probe the existence of attitudes concerning the level of women's ambition, assertiveness, self-confidence and other traits thought important for leaders. Higher scores on the scale are associated with more favorable attitudes toward women as managers, and the possible range is 7 through 147.

To measure different types of interaction between males and females, the cadets were asked to estimate the frequency of interaction with both the opposite and same sex. In the present analyses, we will focus on estimated interaction with the opposite sex in two types of situations. First, cadets were asked to estimate levels of informal activities. This consisted of how much they talk informally, associate in informal situations and select best friends among the opposite sex. It was felt that such informal activities may be the least subject to the impact of the military organization. Second, cadets were asked to estimate levels of

supervisory behaviors such as disciplining and supervising the opposite sex. It was expected that these behaviors would increase over time. It was clear how much and the extent to which levels of interaction might be related to intensity of attitudes.

As indicated, a variety of cadet beliefs were measured by questionnaire items. These will not be individually listed, but rather relevant questions will be presented along with responses.

A wide range of data were collected. Some are interval scale scores at several points in time, others are numerical estimates of interaction levels and some are simply the proportion that answered a particular category for a given question. Characteristics of the data, as well as single or multiple points in time, have to be taken into account in selection of statistical procedures. For these reasons, several different types of univariate and multivariate techniques were used. These included: chi-square, t-test, log-linear analysis, canonical correlation and multivariate  $T^2$ . Also, a number of tables and graphs are included to present general descriptions of data. As each statistical technique is used, it will be discussed briefly.

#### Cadet Beliefs About Sex Integration

Cadets were asked to indicate their agreement with a variety of belief statements concerning sex integration, the treatment of males and females, the success of female cadets in various roles and a self evaluation of their own situations at the Academy. Such beliefs are important because they aid individuals in making sense of their social world via perceptual links regarding situations, attributes of different categories of people

and assessments of expected events or outcomes. According to some social psychologists, beliefs are significant because they provide a foundation for attitudes toward a variety of social objects. In turn, attitudes are thought to provide the primary impetus for behavior in social situations (Fishbein and Ajzen, 1975). In a later section, cadet attitudes, as well as reported behaviors, will be assessed, but first a description of different types of cadet beliefs and their change (or lack of) over time will be presented.

Approaching the situation directly, cadets were asked how successful they thought sex integration had been. Close to one-half of both males and females indicated that women were included in some aspects of Academy life but not others. However, close to one-third believed that in fact females were really a part of all phases of Academy life. At the other end of the scale over fifteen percent felt serious problems still existed in sex integration. Responses in these categories are similar for males and females ( $\chi^2 = 1.57$ ,  $p = .66$ ). Several related questions probed the level of difficulty of integrating specific areas of Academy life. Male and female cadets agreed that some were more difficult to integrate than others--i.e., athletics, military squadrons, and informal interactions. This is not surprising since these areas are ones men and women seldom experience together--except for informal interaction. In contrast, cadets indicated that academic activities and organized social events posed few, if any, difficulties for integration.

As prior research concerning minorities in military life has found, the nature of or perhaps more important the perception of the nature of interactive situations between dominant and minority groups has significant impact on the development of favorable attitudes and cooperative

relationships. For example, perceptions of common goals and interdependence were important in the integration of minority males. To explore the extent to which similar perceptions existed in this situation, several questions were asked concerning beliefs whether males and females shared goals of the Academy and worked cooperatively to achieve them. Several additional questions focused on the extent to which females were respected and taken seriously in this situation. Table 1 contains these items with comparisons of male and female responses. The two right-hand columns contain information from data analyses which used the "t" statistic to test for significance of differences in male and female scores. One column reports the t value and the other the probability level. There are significant differences between male and female responses (i.e., greater than .05) on all but one item.

The first five questions are relevant to issues of common goals and interdependence. In this case, males and females have very different perceptions whether females are an integral part of the Air Force Academy with males believing strongly they are not. Questions two and three point to differences in perceptions about the nature of relationships between the sexes. Males perceive females more competitively than cooperatively or interdependently. In addition, both males and females agree that some comments by officers show female cadets are not taken as seriously as males. In general, these beliefs indicate strong sex differences and few perceptions of interdependence and cooperation.

The last three items in Table 1 provide an indication of perceptions of females in various military roles and again there are sex differences. Males believe females have not been as effective in Academy supervisory roles but females disagree. Males also believe females will not be as

effective as males in either Air Force management or operational--females strongly disagree. From these responses it isn't clear why male cadets subscribe to such beliefs, but certainly they point to possible difficulties female officers may encounter as they move into a variety of Air Force roles. Some insights into the foundation of these beliefs may be obtained from attitudes toward changing roles for women.

Another belief domain which was tapped was how cadets perceive treatment of males and females by commanding military officers and other Academy staff. The use of two questions over time and one asked in the third year of training provide information on these issues. The proportion in each response category for these questions is found on Tables 2 through 4. Two related beliefs concern cadet perceptions of treatment patterns by Air Officers Commanding who are the military officers responsible for cadet squadrons. The data in Table 2 show responses over time for the question "How would you rate the treatment of cadets by AOC's?" Two beliefs were tapped by this question--the extent to which cadets think AOC's are understanding and treat males and females equally. The percentages indicate both males and females are less positive about AOC treatment after four years but along very different dimensions. For example, more males believe AOC's may be understanding and also, to a certain extent, that these officers don't provide equal treatment. At each point in time, there are significant differences in response patterns of males and females.

We also assessed changes in response patterns over time on this question using log-linear analyses. In these analyses, the goal is to understand relationships of sex, response patterns and the two points in time. Given this goal and the nature of the data (nominal) log-linear analysis was appropriate because it is a multivariate technique based upon

chi-square statistics. In this technique, a series of models representing relationships between variables are tested to see how well each one fits actual data patterns. We started with the simplest model which is that sex of cadet and question response in the first year determines responses during the fourth year. This model includes only the individual variable terms and then, in succeeding models, interaction terms for variables are added. The goal is to find a model which closely fits data patterns but with the fewest terms. In these analyses, we obtain chi-square likelihood ratio statistics and corresponding probability levels. We are interested in a small likelihood ratio with a correspondingly high probability level which provides an indication of how likely it is that a particular combination of variable terms will yield the actual data patterns.

In this case, we obtained the following results from the analysis of sex responses during the first year and responses in year four.

Variable Models	Degrees of Freedom	$\chi^2$ Likelihood Ratio	Probability Value
1. SY1, Y4	21	15.50	.792
2. SY1, SY4	18	15.15	.651
3. SY1, Y1 Y4	12	4.15	.981
4. SY1, SY4, Y1 Y4	9	3.89	.913
S = Sex of Cadet      Y1 = Year One Response      Y4 = Year Four Response			

We find that model one, which uses sex and response during year one to predict year four, actually does quite well and yields a probability of .792. However, when the interaction of year one and year four is also included in model three we obtain almost a perfect fit for the data patterns. This means that response patterns over time are somewhat more important for understanding the data than patterns according to sex.



Several factors may underlie these findings for females. In part, they may result from the fact that female cadets, compared to males, have more uniformly positive endorsements of changing roles for women. In addition, female cadets, as a recent minority in this setting, have increased their interaction with the opposite sex more than males. This is understandable given the sex ratio and the fact that most of the power and influence is in the hands of males.

The analyses of attitudes and interactions have provided information regarding the quantitative nature of interactive situations at the Academy. Basically, the findings show that males who are less favorable toward changing roles for women are those who have been supervising and disciplining females more. Similarly, males who subscribe to more traditional views also have less informal interaction with female cadets. These two findings may point to potential problems in interaction between males and females, but since these questions focused on the levels--not the qualitative dimensions--of interaction, it isn't possible to describe the nature of such interactive situations.

#### Summary and Implications

Two general points can be made concerning the results described in the prior sections. First, clear sex-linked differences exist on almost all measures. Second, there are some indications of changes in beliefs, attitudes and interactions along the lines which might be expected in sex integration given the characteristics of this organization and the interactional settings. In the following paragraphs, we will summarize these findings and provide some interpretations.

between degree of traditionality of attitudes and levels of informal interactions for males. In this case, those who interact more tend to have less traditional attitudes.

Correlational analyses of more formal interactions of supervising and disciplining the opposite sex and attitudes toward several types of changing roles for women also were calculated for each sex at two points in time. In the analyses for males, results were somewhat different than those obtained in analyses of informal interactions and attitudes. In this case, levels of attitudes and amounts of supervision and discipline were largely unrelated at the first point in time ( $.32, p = .21$ ). However, during the last year of training, this changed. At this time, there was a negative correlation of  $-.51$  ( $p = .002$ ) with approximately 27% of the variance accounted for by these variables. The most important attitudinal variable was attitudes toward women at the Academy (coefficient of  $-.77$ ) and the most important interaction was disciplining the opposite sex ( $.89$ ). Thus, during the last year of training, males who supervised and disciplined female cadets more subscribed to more traditional attitudes.

All correlation analyses for female cadets indicated that attitudes and interactions were largely uncorrelated at both points in time. Since none indicated significant results, we will not discuss each set, but rather provide one example. During the first year, the correlation between the three attitudes and informal interactions of talking, associating and best friends was  $.25$  ( $p = .54$ ), and only about 2% of the variance was accounted for by these two sets of variables. For female cadets, then, we find that levels of traditionality of attitudes toward changing roles for women and amount of interaction with the opposite sex are largely unrelated.

aim of this technique is to account for the maximum amount of relationship between two sets of variables which, in this case, consisted of three attitude scales (i.e., Attitudes Toward Women, Toward Women at the Academy and Toward Women in the Military Roles) and three measures of informal interaction with the opposite sex as well as the three attitude scales and two measures of formal interaction (i.e., supervise and discipline).

We calculated a number of canonical correlations. We assessed attitudes and interactions of males in year one and in year four and did the same for females. Because other analyses ( $T^2$  and  $t$ 's) indicated that attitudes and interactions of males and females differed significantly, we did not pool scores for fear of creating spurious correlations.

Results of the correlation analysis for informal interactions and attitudes of males during the first year indicated a significant correlation of .46 ( $p = .004$ ) with slightly more than 21% of the variance accounted for by these two sets of variables. An examination of the canonical variates for each set of variables revealed that the most important attitude was attitudes toward women at the academy (with a coefficient of .87), and the most important interaction was talking with the opposite sex (with a coefficient of .91).

Analysis of these same attitude and interaction variables for males in their fourth year showed similar (but not as strong) results. The correlation coefficient was .37 which did not quite reach significance at the .05 level ( $p = .07$ ) and explained slightly more than 15% of the variance. Again, canonical variates indicated that attitudes toward females at the Academy were the most important attitude (with a coefficient of .95), but the most important interaction was best friend of the opposite sex (with a .83 coefficient). This indicates that there are relationships

Similar  $T^2$  analyses were calculated for supervise and discipline interaction scores. In this case, only changes in female scores over time were somewhat significant ( $T^2$  9.07,  $p = .06$ ). The significant difference was only in terms of the  $t$  for supervise scores ( $t = 1.95$ ,  $p = .05$ ). The  $T^2$  for changes in male scores was not significant ( $T^2$  1.49,  $p = .73$ ). Also the  $T^2$  for the differences in male and female scores over time was not significant indicating that males and females maintained the same relative positions on these variables. Over time, then, there has been very little change in terms of the quantity of these types of formal interactions.

Basically, these measures of interaction indicate that over time males and females have spent more time together--particularly in terms of informal activities. These represent quite different trends than those evidenced by cadet beliefs and attitudes. This is not really surprising given the fact that most interactions in the Academy setting have not involved high levels of cooperation and interdependence compared to the circumstances during the integration of minority males into military organizations so we would not have expected as much change in attitudes and beliefs. However, in the next section, the relationships between these interactions and attitudes will be explored.

#### Attitudes and Interactions

Another issue is whether levels of traditionality of attitudes correlate with levels of interactions over time. Past research suggests that under certain interactional conditions this may occur. Since we have several measures of attitudes and several interactions, it was necessary to employ a multivariate correlations technique (canonical correlation). The

Not surprisingly, given the sex ratio, females report a higher proportion of interaction with males than the reverse. Also, for most measures, the proportion of time females spent interacting with males increased more than male interaction with females. These scores were used in a series of statistical analyses to test the significance of differences over time.

In order to test the formal interaction scores of supervise and discipline simultaneously, again the  $T^2$  statistic was used. Another series of  $T^2$ s were calculated using the three informal interaction measures together. Results of analyses of informal interactions showed that male interaction with the opposite sex had increased significantly over time ( $T^2$  45.09,  $p = .001$ ). Thus, the hypotheses of no differences were rejected and individual  $t$ 's were examined to determine which measures contributed to the rejection. For male interactions,  $t$ 's for each type of interaction were significant, however, the most significant  $t$ -test was for the increase in talking informally with females ( $t = 5.08$ ,  $p = .001$ ). In terms of female informal interactions with the opposite sex, there also was a significant increase over time ( $T^2$  131.42,  $p = .000$ ). Again, all three  $t$ 's were significant, but there was more of an increase in male best friends compared to other interactions ( $t = 8.72$ ,  $p = .001$ ).

Another issue is whether male and female interactions change by the same amount over time. To test this a variation of the  $T^2$  test focused on differences between male and female means for each measure at each time. Testing the significance of these differences for informal interactions yielded a  $T^2$  of 26.43,  $p = .001$  which means that the gap between the sexes increased over time. In large part, this was due to increased female interaction with males relative to male increases. Again, we looked at individual  $t$ 's and found that the difference of means for best friends contributed the most to the  $T^2$  ( $t = 4.38$ ,  $p = .001$ ).

officers are very positive concerning women's abilities to operate in the business world as well as in the military.

In general, then, scores on the several attitude scales point to clear and persistent sex differences. While there have been some attitudinal changes, in a nontraditional direction, we still find the relative gap between scores of males and females has remained largely unchanged. It appears that, in fact, many beliefs discussed in the prior section do find expression in the variations in cadet attitudes.

#### Interaction with the Opposite Sex

Studies of integration of male minorities into military units have focused in part on both the quality and quantity of interaction between dominant and minority groups. In the military, even more than in other formal organizations, a significant proportion of such interaction is formally structured according to particular tasks, specific roles, etc. In general, more structured interaction makes it more difficult to exhibit discriminatory behavior based upon prejudicial attitudes than is the case with informal settings. Along these lines, cadets were asked to report their estimates of the amount of interaction in several formal as well as informal situations. These questions were asked at two points in time in order to assess trends and changes. In terms of formal interaction, cadets were asked to estimate the time they spent both supervising and disciplining cadets of the opposite sex. They also were asked to report the percentage of time spent in several informal activities--informally talking and associating with the opposite sex and percentage of best friends of the opposite sex. Means for these measures are reported in Table 7.

Table 6 contains mean scores for males and females on the WAMS scale at two points in time during training. As can be seen, male scores are significantly lower or less favorable, toward women in management positions at both points in time ( $t = 11.62$ ,  $p = .000$ ;  $t = 10.86$ ,  $p = .000$ ). Also, there is little change in scores of either sex over time (males;  $-t = 1.25$ ,  $p = .10$ ; females:  $-t = -.27$ ,  $p = .81$ ).

Perhaps, more informative in the present context are some comparisons between males and females on several factors which comprise segments of the scale. For example, one factor contains a number of items concerning the existence of a number of common biological and emotional traits which some believe may render women unfit for leadership positions. These questions ask about the possible impact of menstruation problems, pregnancy and emotional stability. On these issues male and female cadets differend most significantly with males agreeing strongly concerning the importance and impact of such factors ( $t = 12.68$ ,  $p = .000$ ). The second area with strong male and female differences was in terms of specific traits thought to be important for managers. For example, males agreed more strongly than females with notions such as "women are not ambitious enough to be successful in the business world", "women cannot be assertive in business situations that demand it" or "women are not competitive enough to be successful in the business world" ( $t = 9.95$ ,  $p = .000$ ).

These results indicate very strong male and female differences concerning assessments of women's potential for management positions in the business world. In fact, scores of male cadets on these issues are significantly less favorable than a sample of male employees in a business setting, which really isn't surprising given cadet scores on other attitudes scales ( $t = 3.72$ ,  $p = .01$ ), indicating that future female

changed significantly ( $t = -3.11$ ,  $p = .01$  and  $2.11$ ,  $p = .01$ , respectively). There was only one significant change in attitudes scores of females and this was attitudes toward changing societal roles ( $t = -4.49$ ,  $p = .01$ ). To complete the analysis of attitude change, a variation of  $T^2$  was calculated on differences between male and female scores at each point in time. This is to see if male and female scores changed the same amount relative to each other. In this case, the  $T^2$  of 6.02 did not quite reach the .05 significance ( $p = .06$ ) and individual  $t$ 's indicated that only on the attitudes toward women at the Academy scale was there a difference approaching significance. Thus, basically, differences between the sexes remained the same even though there were some individual changes in attitudes over time.

Another scale that cadets were asked to complete was the Women as Managers Scale. This was developed approximately five years ago to measure the existence of sex-role stereotypes concerning women in leadership positions. Such stereotypes have been cited as possible barriers to women entering administrative positions as well as possible bases of differential treatment in organizations (Schein, 1973). The WAMS scale has been administered primarily in business or college settings in an attempt to verify the existence of stereotypes and specific behavioral situations where they may operate. In this context, however, the scale was used primarily as a supplementary measure to provide insights concerning specific aspects of attitudes toward women in leadership positions. Using this scale, it is possible to examine a number of reasons why cadets believe women should, or should not, occupy leadership roles. For example, this scale contains items concerning biological, psychological and social traits which respondents may believe are salient for women in leadership positions.



However, differences between male and female scores remain consistent and t-tests indicate significant differences at all points in time. These changes are comparable to findings from entering classes at West Point on similar measures with some change toward increased acceptance over time.

During the last few months of cadet training, two additional questions were posed for cadets which focused on the extent to which they perceived their friends subscribed to similar or different attitudes. This was designed to probe how much social support cadets believe they have for their attitudes. One question asked cadets to agree or disagree that most of their friends had negative attitudes toward the integration of women. Males agreed significantly more strongly than females ( $t = 4.28$ ,  $p = .000$ ). The second question approached the issue in terms of whether cadets thought they had more favorable attitudes toward the integration of women than most of their friends. In this case, males disagreed with the statement significantly more than females ( $t = 3.23$ ,  $p = .002$ ). In other words, both males and females perceive they have social support for their attitudes, with males indicating this much more strongly.

Returning to cadet scores on the three attitude scales, more systematic assessments of changes in attitudes over time were conducted using the  $T^2$  statistic. Several  $T^2$ 's were calculated using means of the attitude scales at two points in time on Table 5. In testing the significance of changes for males a  $T^2$  of 11.85,  $p = .05$  was obtained, and for females the  $T^2$  was 20.65,  $p = .01$ . Thus, for both sexes there were significant changes over time. Through an examination of individual t's it is possible to ascertain which attitudes contributed the most to the multivariate T. These showed that for males both attitudes toward changing societal roles for women as well as attitudes toward females at the academy

trends in formal and informal interactions. In addition, we will assess relationships between these two sets of variables.

Attitudes over time are portrayed graphically in Figures 2 and 3. Figure 2 displays cadet scores on the Spence Attitudes Toward Women Scale and scores for college juniors and seniors. As can be seen, both male and female scores increased in a nontraditional direction over time, but rather substantial differences between these scores remain at all points in time. The t-tests indicate that at each point in time there are significant differences between male and female scores. Air Force males are significantly more traditional than college males ( $t = 8.26, p = .000$  and  $t = 10.53, p = .000$ ), while college females and female cadets are not significantly different ( $t = 1.72, p = .10$  and  $t = 1.98, p = .10$ ).

For comparative purposes recent scores of West Point Cadets were also examined. These showed that entering males in the 1982 class at West Point had scores similar to graduating seniors at the Air Force Academy, but female Air Force cadets had slightly higher scores than entering female cadets at West Point (Adams, 1979, p. 49). In general, then, we can say that female cadets are not different from either college counterparts or women entering other service academies, but male cadets are considerably more traditional. This is not surprising since studies have shown that males entering service academies tend to be more conservative than similar youth populations (Lovell, 1964).

Figure 3 shows scores over time for two attitude scales developed specifically for this research setting--i.e., Attitudes Toward Females at the Air Force Academy and Attitudes Toward Women in Military and Combat Roles. As we see, scores of female cadets have remained remarkably stable, whereas male scores have changed slightly in a less traditional direction.

cooperation and interdependence between the sexes. This orientation also is reflected in belief trends regarding acceptance and solidarity in squadrons. Female cadets perceive, undoubtedly correctly, somewhat less acceptance and solidarity in their squadrons.

A number of other beliefs regarding comparisons between the sexes in several specific endeavors provide some insights into perceptual mechanisms used to maintain sex-linked differences. For example, males don't think females do as well in supervisory and leadership situations. Also, male perceptions regarding the treatment of females by officers indicate they think there are sex-linked differences. In essence, a large number of males believe females are treated differentially and receive some positions because of tokenism instead of qualifications. Thus, given that many males think that once in such positions females don't perform as well, it is a circular, no win process for many young women who obviously don't share most male beliefs. These results indicate the continued existence of rather negative stereotypic beliefs among males regarding females even though the numbers of women at the Academy have increased and women have successfully completed all facets of Academy training.

#### Attitudes Toward Changing Women's Roles

As we pointed out, an important aspect of intergroup relations is the nature and impact of participant attitudes, and studies of male minorities in military organizations have found that attitudes become more favorable as integration becomes more widespread. Such attitude changes also have been related to amounts and types of interaction between groups. Thus, in this section we will examine trends in cadet attitudes, and in the next,

scores rose, which indicates that the longer male cadets are at the Academy the more solidarity they perceive.

One question in this project is change over time in beliefs, attitudes and interactions. Since some measures are intercorrelated, it is necessary to use a statistic which allowed a comparison of more than one set of scores at several points in time. To test changes in acceptance and solidarity scores simultaneously, Hotelling's  $T^2$  statistic was used. This is a multivariate application of the univariate t-test which is applied to analyses of repeated measures on samples (Morrison, 1976). Using this statistic, we found no significant difference in female scores in the first and fourth year ( $T^2$  6.63,  $p = .08$ ) even though there was some decline in these beliefs. Male scores, however, changed significantly and this was due to an increase in perceptions of squadron solidarity ( $T^2$  9.78,  $p = .05$ ). A related issue is whether male and female beliefs regarding acceptance and solidarity change the same or different amounts relative to each other. To test this, a variation of  $T^2$  was used to test differences between male and female scores at the beginning and end of training. The  $T^2$  statistic for sex differences was not significant, indicating that the relative position of male and female scores was the same over time ( $T^2$  5.32,  $p = .10$ ).

This section has described a variety of beliefs reported by cadets both early and late in their training. Many of these items were included because of the importance that such perceptions play in the formation and expression of attitudes and behavior. The findings indicate that cadets still think some problems exist with integration in the areas of athletics and military activities--which are central to academy goals and programs. It isn't surprising, then, that males and females don't think there is much

terms of the nature of criteria used in cadet assignments. They were asked whether squadron and other assignments were based on cadet qualifications or whether some females obtained positions because of a perceived need to place a certain number of women in leadership positions (tokenism). As data on Table 4 indicate, over two-thirds of male cadets, compared to one-third of females, think that tokenism is operating. In comparison, twice as many females, compared to males, think that cadet qualifications are the primary basis for assignments. Again, responses of males and females are significantly different ( $\chi^2 = 21.9$ ,  $p = .000$ ).

Several other beliefs concerning military activities at the academy were explored through questions regarding cadet perceptions of their own acceptance in squadrons as well as the extent of solidarity in squadrons. Given sex-linked differences in response to these questions during the first year of training, and the evidence that males and females still differ in their perceptions of cooperation and interdependence, it isn't surprising that over the four year period differences between males and females persist. Trends in responses to these questions are portrayed in Figure 1.

Female beliefs regarding acceptance are significantly lower than males at each point in time ( $t = -2.83$ ,  $p = .005$ ;  $t = -3.02$ ,  $p = .003$ ;  $t = -4.17$ ,  $p = .001$ ). Over time, however, female scores decline somewhat while male perceptions of acceptance remain stable. Cadet beliefs regarding levels of solidarity in squadrons followed somewhat different patterns. There were no significant differences between the sexes except during the last year of training ( $t = 2.10$ ,  $p = .04$ ). Again, female scores declined while male

Information in Table 3 reports another aspect of the perception of treatment by ADC's--favoritism toward female cadets. During the first year, close to one-half of male cadets reported they really didn't know if favoritism existed but by the fourth year this proportion had declined significantly. While two-thirds of males believed no favoritism toward females existed, 22% disagree. This is quite a change from the 1% in year one who said there was favoritism. As can be seen, female responses remained quite consistent over time with close to 90% at both times indicating they didn't believe there was any favoritism toward females. As would be expected, such male and female differences were significant at both points in time.

Again, in order to understand relationships of sex and responses at both points in time, a log-linear analysis was completed and yielded the following information.

Variable Models	Degrees of Freedom	$\chi^2$ Likelihood	Probability Level
1. SY1, Y4	10	19.33	.036
2. SY1, SY4	8	10.38	.239
3. SY1, Y1 Y4	6	8.08	.232
4. SY1, SY4, Y1 Y4	4	0.35	.986
S = Sex of Cadet      Y1 = Year One Responses      Y4 = Year Four Responses			

As can be seen, it isn't until both interaction terms of sex and response and responses at year one and four are included in model four that a high probability level is obtained. In this case it is quite high (.986), indicating that both sex and responses over time are needed to fit actual data patterns.

During the third year of training, cadets were asked again about the treatment of male and female cadets but the question posed the issue in

On most beliefs concerning specific aspects of sex integration, we found little agreement between the sexes. Males did not feel females shared the goals of the Academy and indicated there was little cooperation between the sexes. Males also were more negative than females concerning women's actual or potential performance in military roles. In terms of cadet beliefs regarding treatment of cadets by officers, it is clear that a number of males don't believe that sexes are evaluated fairly and, where appropriate, equally. These responses, along with the strong male belief in tokenism as a basis for female accomplishments, point to conditions that are not particularly conducive for promoting sex integration.

On the other hand, results showed changes in cadet attitudes and levels of interaction over time. Apparently, males and females are spending more time talking, associating and having best friends of the opposite sex. As might be expected, this is particularly true for females. Analyses of several different attitudes revealed significant changes for both sexes. Attitudes toward women in changing societal roles changed the most and toward nontraditionality. However, persistent gaps still exist between male and female scores. In other words, even though both are increasing in their enthusiasm for changing female roles, differences between males and females are not really diminishing.

Among male cadets we found some changes on several other attitude scales. For example, they became somewhat more positive concerning females at the Academy as well as women in military leadership roles. In contrast, female responses were significantly more positive and changed very little over the four year period. This means that the gap between male and female attitudes on some issues is narrowing somewhat.

The analyses of relationships between attitudes and interactions showed that these covary for males. For example, those who subscribe to more favorable attitudes report more informal interaction with females. The relationship between these variables did not covary significantly among female cadets.

In general, then, the situation at the Academy is much the same as earlier. There are still strong sex-linked differences as well as very few changes in cadet attitudes and interactions. Given the conditions of most male-female interaction, there are indicators of strain, and until there are a number of significant changes in this situation--the pressures will be relieved only very slowly.

The point is that, although there may be increased social contact between dominant and minority groups, it may or may not have a positive impact on attitudes and beliefs. As prior research on minority groups shows, the direction and intensity of change depends largely on the nature of the interactive conditions (Amir, 1969). That is, in some situations there may be increased interaction between majority and minority groups, but no increase in positive attitudes and beliefs.

An important component of such interaction is for groups to perceive common fates and to approach tasks in cooperative ways (Secord and Backman, 1974). In this case, women and men do not have common fates since females are excluded from combat and combat-related positions which are regarded as central tasks of military organizations. Perhaps more important, males do not believe females are a central part of the Academy and regard them competitively rather than cooperatively.

Another important aspect of intergroup relations involves the roles of majority and minority individuals during integration. For example,



research has shown that integration proceeds much more smoothly if minority persons have roles, or perform in ways, that are incompatible with past stereotypes (Campbell, 1967). This was not the situation in early experiences with females at the Academy. In many military and field experiences, women were in activities that involved behavior which tended to be compatible with stereotypes. Females were not as prepared physically, or culturally, for much of the demanding aggressive and physical training. Even though these activities were completed in the first few months, they tended to set the perceptual frameworks. In fact, one or two similar periods of training during later years probably helped solidify some of these beliefs and, in addition, there remains a strong emphasis on athletics at the Academy in terms of required physical education classes and intensive intramural competitions. It was precisely in these areas that cadets said integration was most difficult and it is clear that these areas are still regarded by Academy officials and officers as central to the institution. Unfortunately, we also found that male cadets perceived females are not, nor will be, as effective as men in supervisory or management roles. Certainly these are positions in which civilian women are performing well, and objective performance indicators in these areas at the Academy show few differences between males and females. The perceptual differences remain which contributes to perceived role congruencies, lack of acceptance, and hostilities for females in this military setting.

As a final point, it is important to keep in mind that this military organization, particularly, is characterized by strong norms of tradition, maleness, and eliteness and tends to attract people who support such norms. We know from prior research that males who attend service academies tend to

be more conservative in their political and social outlook than comparable youth and that they change very little during their training (Lovell, 1964). Thus, it is not surprising that young men at the Air Force Academy, West Point, and other service academies tend to be very traditional in their orientations toward changing roles for women. This means it will not be easy for them to accept women in military and other nontraditional roles. This is supported by another finding that the majority of male cadets expect to have rather traditional careers with non-working wives at home with children (DeFleur et al., 1979). Given these orientations and the situation these young men and women experience at the Academy, it is not surprising that perceptual and attitudinal changes are occurring very slowly.

It is not easy to break down deep-rooted and powerful attitudes and beliefs even though increased numbers of young women attend service academies and perform in many military roles. At the same time, powerful cultural norms of maleness and traditionality persist in these organizations and are passed on to each new generation of participants. It is possible to change such norms, but only over a long period of time through a combination of changes in Academy programs; concerted efforts to broaden the social backgrounds of males recruited to these programs and strong affirmative efforts to increase both the numbers of women officers in positions of power and influence as well as the numbers of female cadets. Such changes are not easily implemented but are essential for changing the course of the present sex integration process.

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TABLE 1  
CADET BELIEFS ABOUT SEX-INTEGRATION  
AND MILITARY ROLES FOR WOMEN  
(Year 4)

ITEM	MALE $\bar{X}$ * N=92	FEMALE $\bar{X}$ *	t VALUE	p VALUE (2-tailed test)
Female cadets are an integral part of the USAFA mission	3.23	1.71	8.39	.000
There has been a great deal of cooperation between male and female cadets to help each other through Academy programs	2.63	1.94	4.26	.000
There is little competition between male and female cadets at the Academy	3.44	3.94	-2.95	.004
Remarks of some male cadets indicate a lack of respect for female cadets	1.83	1.73	0.71	.478
Some comments by officers indicate that women cadets are not taken as seriously as male cadets	2.79	2.42	2.01	.046
Female cadets have been as effective as male cadets in supervising the lower classes	3.17	1.66	8.43	.000
Women would make just as good operational airmen as men if they were given the same training	2.93	1.58	8.78	.000
Female officers will be just as effective as male officers in military management position	2.26	1.29	6.55	.000

\*The scale runs from 1 = Strongly Agree to 5 = Strongly Disagree

TABLE 2

CLASS OF 1980 RESPONSE TO:  
HOW WOULD YOU RATE THE TREATMENT OF CADETS BY  
AIR OFFICERS COMMANDING?

<u>Response</u>	Year 1		Year 4	
	Male	Female	Male	Female
	<u>%</u>		<u>%</u>	
Understanding and Equal	77.1	66.1	51.0	54.0
Understanding and Not Equal	6.4	2.9	20.2	8.1
Not Understanding but Equal	11.9	27.5	12.8	24.1
Not Understanding	4.7	3.6	16.0	13.8
	<hr/>		<hr/>	
	100.1	100.1	100.0	100.0
	Males = 94		Females = 85	

TABLE 3

CLASS OF 1980 RESPONSE TO:  
DO YOU THINK AIR OFFICERS COMMANDING SHOW FAVORITISM  
TOWARD FEMALE CADETS?

<u>Response</u>	Year 1		Year 4	
	Male	Female	Male	Female
	<u>%</u>		<u>%</u>	
Yes	1.1	3.1	21.4	8.1
No	51.1	81.6	64.1	86.9
Don't Know	43.8	15.3	14.5	4.9
	<hr/>		<hr/>	
	100.0	100.0	100.0	99.9
	Males = 93		Females = 85	

TABLE 4

CLASS OF 1980 RESPONSE TO:  
WHAT DO YOU THINK IS THE BASIS FOR  
SQUADRON AND OTHER LEADERSHIP ASSIGNMENTS?

<u>Response</u>	Year 3	
	Male	Female
	<hr/>	
	%	
Cadet Qualifications	21.1	41.5
For Males Qualifications but for Females Tokenism	68.1	31.9
Not Based on Either One but Some Other Criteria	10.7	26.6
	<hr/>	
	99.9	100.0
	Males = 93	Females = 85



TABLE 5  
CADET ATTITUDES TOWARD CHANGING  
SOCIETAL AND MILITARY ROLES  
FOR WOMEN

<u>Attitude Scale</u>	Year 1		Year 4	
	Males $\bar{X}$	Females $\bar{X}$	Males $\bar{X}$	Females $\bar{X}$
AWS*	42.1	54.4	44.5	58.2
Females at Academy**	.88	-3.05	.25	-3.08
Females as Military Leaders**	.10	-2.45	-.06	-2.42
	Males = 93		Females = 84	

\*Spence Attitudes Toward Women Scale range from 0 to 75 with higher scores non-traditional.

\*\*Scores range from 4 to -4 with higher negative scores non-traditional.

TABLE 6  
WOMEN AS MANAGERS SCALE

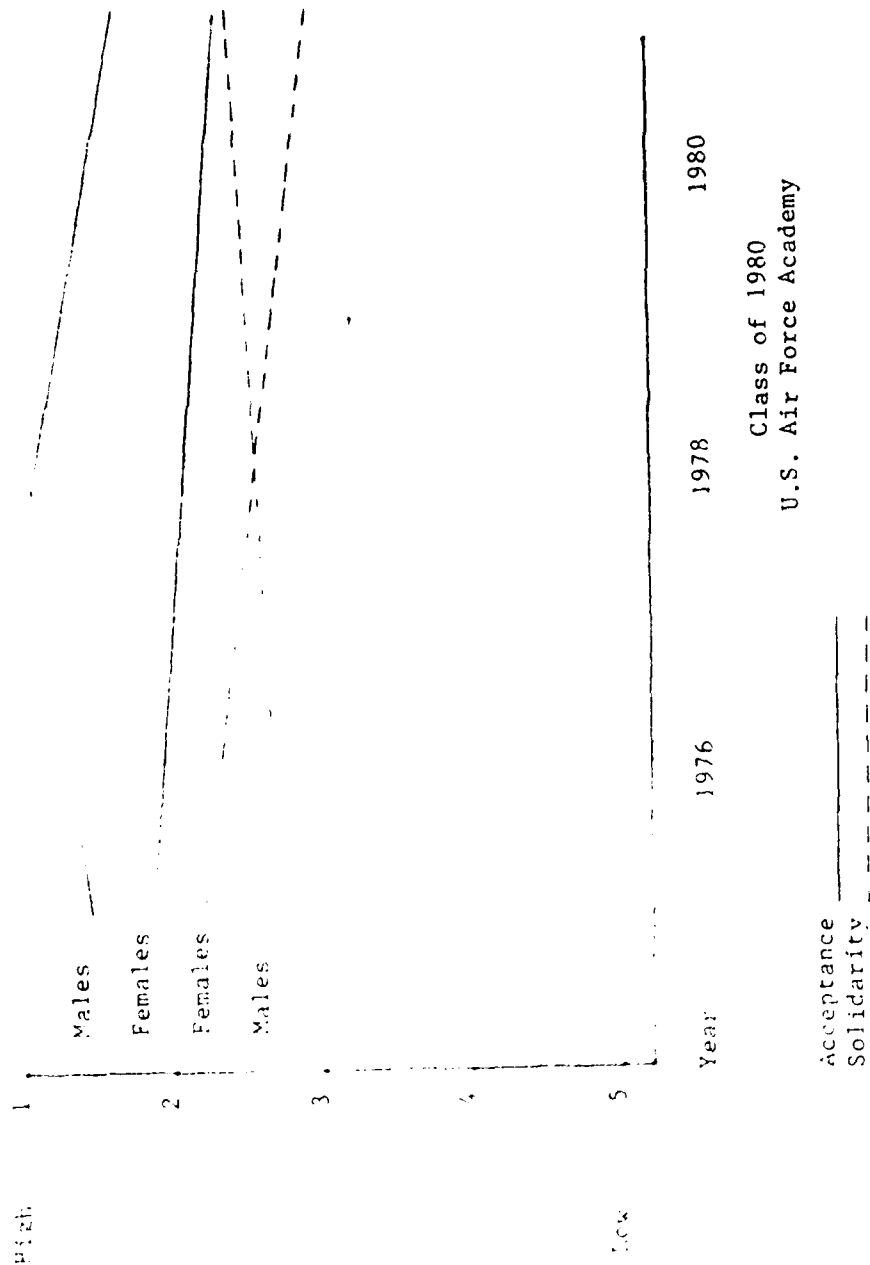
<u>Sex</u>	<u>N</u>	<u>Time</u>	
		<u>Year 2</u> <u><math>\bar{X}</math></u>	<u>Year 4</u> <u><math>\bar{X}</math></u>
Males	93	90.3	93.1
Females	85	130.2	131.1

TABLE 7  
AVERAGE AMOUNT OF CADET INFORMAL INTERACTION  
WITH THE OPPOSITE SEX

Type of Interaction	Time			
	Year 1		Year 4	
	Males $\bar{X}$	Females $\bar{X}$	Males $\bar{X}$	Females $\bar{X}$
Talk Informally	2.18*	3.78	2.68	4.81
Associate Informally	2.07	3.93	2.44	4.71
Best Friends	1.61	3.46	2.01	4.60
Supervise	2.23	5.47	2.33	5.67
Discipline	2.22	5.26	2.25	5.30

\*Scores range from 1 to 7 with larger numbers representing more interaction.

# PERCEPTIONS OF ACCEPTANCE AND SOLIDARITY IN SQUADRONS



time. Initially there is a significant difference in male and female responses with more males stating they are certain they will pursue careers even if they have money. At the end of the last year at the Academy, such differences are not as significant. There are few changes in male responses over time but more young women in year four said they will pursue careers even though they could live comfortably. At both times, however, almost twice as many young women, compared to men, are undecided about this. Perhaps more important is that three quarters of these young people indicate careers will be salient factors in their lives.

A somewhat different view of the importance of career is obtained through cadet scores on the Occupational Aspirations Scale. It will be recalled that this scale asks respondents to choose occupations they regard as possible future choices. While cadets have in effect ruled out many of these choices, their responses provide a general measure of their occupational aspiration levels. Table 4 contains average scores for both civilian and Air Force males and females. It is interesting that female Air Force cadets score significantly higher than any of the groups indicating they are generally oriented toward high prestige occupations. While the data show both male and female Air Force cadets are strongly career oriented, the young women are particularly motivated toward high prestige occupations. As we shall see, however, these young women have concerns about their future lifestyle and potential career and family conflicts.

#### Career Choices and Role Models

In discussing career patterns in the Air Force, both the choice of specific career field as well as expectations regarding future rank

First, however, we will review who cadets turn to for help in solving their problems. For each problem listed on Tables 1 and 2 cadets were asked to choose from a list of 10 people who they would most likely go to first for advice. The people listed ranged from male or female cadet friends, Air Force officers, various adults and friends of the same age. Results at both points in time reveal different patterns for males and females. For example, in trying to solve problems females said they went to a larger number of people than males. For a particular problem, such as sex role/career conflict, females indicated they would talk with either their mother or father as well as cadet friends or other adults. Also for solving most problems females, compared to males, indicate they will talk to their mothers, female cadets and civilian adults more often. In general, males say they would seek advice from their fathers as well as Air Force officers more often than females.

The above differences in advice seeking patterns characterized about one-half of the problems. However, it is important to point out that for some problems cadets sought advice from the same people. Again, though, it is clear that female cadets do not go to Air Force officers (either male or female) for advice as frequently as male cadets seek advice from male officers.

As we see in reports of cadet problems, career issues are of primary importance which is an indirect measure of career salience. Several other measures also provide indicators of career importance. For example, twice during the four years cadets were asked if they will pursue a full-time career even if they have enough money to live comfortably. The proportions who answered they would, would not, or are undecided are reported in Table 3. The most interesting findings are changes in female responses over

their first and last years of training that career choice issues are their most important problems (see Tables 1 and 2). This is equally true for males and females even though there are differences in the importance of other problems (chi-square probabilities for sex differences are less than .05). The sexes are similar in their ranking of academic concerns as the second most important problem they face and this is not surprising. However, in this particular setting we expected problems of military-related matters would be ranked higher than they were.

Focusing on similarities and differences between males and females over time several trends are apparent in Tables 1 and 2. During the first year more young women, than men, indicate they are concerned about military-related issues, peer relationships, and relationships with the opposite sex. In fact, at both times more females indicate they are worried about resolving sex role/career conflicts. It is interesting to note, however, that by the end of the training more males than females are concerned about relationships with the opposite sex and financial problems. In comparison, toward the end of training young women become much more concerned about military morality issues and few men are worried about these matters.

The choices of most important problems facing these young people at two different times in their educational experience point to both differences between the sexes as well as different patterns over time. This indicates that male and females experience different adjustment and adaptation problems as they move toward military careers. These will be illustrated more fully as we examine cadet career and lifestyle decision making.

Another scale used in the present analyses has been described in the prior chapter--Attitudes Toward Women Scale (AWS). It is relevant because studies report that young men and women entering changing occupations subscribe to more non-traditional sex-role attitudes than those in other fields. It will be recalled that this scale consists of 25 items concerning various rights and roles of women in areas such as work, education and sexual activity (Spence et al., 1973). Response categories range from Strongly Agree to Strongly Disagree and higher scale scores indicate more favorable orientations toward changing roles. In some of the present analyses, scores are grouped into high, medium and low categories.

Finally, some information concerning cadet background characteristics is used. Specifically, several variables discussed in Chapter 1 are used in analyses of cadets who choose different types of careers and lifestyles. These variables are selected because they have been used in other studies of career development. These are: mother's and father's occupational level; mother's and father's education; and cadet birth order in family. As we discussed, male and female cadets differ on several of these variables and we will investigate their possible relationships to career and lifestyle preferences. These data are collapsed into either three or four responses categories for analysis.

As is evident from descriptions of variables, a large amount of data is summarized in the present chapter. Additional details concerning variables and specific questionnaire items will be discussed with results.

#### Cadet Problems and Career Salience

Young adulthood is a period of career socialization and decision making thus it is not surprising that Air Force cadets report during both



future. Cadets were asked what they perceived as most important problems and who they turned to for advice. During the last year of training, cadets were asked who they considered important people in their lives and wanted to use as role models for their future careers and lifestyles. Cadets indicated how much they wanted to be like certain types of people such as Air Force officers and then were asked directly who they considered their most important role model. These data are presented in tabular form.

A number of social psychological scales were administered at different times during this project. Several scales measured attitudes toward changing sex roles and results from these were discussed in the prior chapter. Others measuring personality characteristics such as achievement, motivation and self concept will be discussed in the following chapter. However, several of these are relevant to career and lifestyle development. For example, during the second year of training cadets were asked to complete the Occupational Aspirations Scale (OAS) which is used in studies of occupational and educational attainment (Haller et al., 1974). Findings indicate this scale is correlated with other indicators of achievement (e.g., GPA) as well as individual characteristics such as race and sex (Hotchkiss et al., 1979). The scale is comprised of eight items which ask respondents to choose from lists of occupations in terms of idealistic and realistic future job choices. The scale scores represents the range of higher or lower prestige occupations that the person sees as acceptable for him or herself. Most prior research with this scale sampled high school students and even though when cadets make the decision to enter the Air Force Academy they have effectively precluded other occupations, their answers provide a comparison with other young people in terms of general levels of occupational aspirations. For the present analyses these scores are divided into high and low levels of aspiration.

controller); operations support (maintenance, security field, etc.) and other (administrative, personnel and miscellaneous).

Information on the career level cadets expect to attain is obtained by asking them to indicate the specific rank they think they will reach during their time in the Air Force. Ranks from second lieutenant through captain; major through colonel and general officer.

Other dimensions of career development were investigated using several other questionnaire items. For example, cadets were asked about their general commitment to working; how fast they think they will advance in their careers; how satisfied they are with present assignments and other career-related topics.

The measurement of lifestyle plans consists of several different indicators. A lifestyle scale was created and several additional questionnaire items focused on issues such as cadet relationships with the opposite sex, concerns in dual career situations, plans for children and the like. The lifestyle scale consists of items concerning career and family alternatives and options for future child care. For example, cadets are asked what they expect their lives to be like in 15 years and the options they can select range from a single career person to being married, pursuing careers with and without children. Cadets also are asked to choose between options ranging from home child care to commercial facilities. Situations described in these questions are ordered and given values in terms of the degree of traditionality. Scores are calculated and then divided at the mean into two categories---traditional and nontraditional.

In addition to investigating future plans of cadets, we also probed some influences on them as they considered many decisions about their

affecting careers and family life have to be reexamined in terms of changing personnel composition with the recognition of changing lifestyles. After reporting results from the investigation of these issues, we will discuss more specifically how they affect military organizations.

#### Measurement of Variables

Several different types of data have been collected for analyses of career and lifestyle plans and related variables described in the present chapter. Some of these have been discussed in prior chapters but their basic characteristics will be reviewed again. Almost all the questionnaire items and scales are administered more than once to cadets. Since the primary emphases are career and lifestyle orientations, these measures were included in questionnaires during the last two years of training when such issues are most salient for cadets. Most data are in categorical format and the statistics used are simple chi-squares and log-linear analyses. While trends over time will be discussed, only a few statistical analyses were applied to the longitudinal data.

Cadets were asked several times what Air Force career field they expected to enter and what rank level they realistically expected to attain as indicators of their career plans. Cadets chose career fields from a list of Air Force specialities in terms of what they thought they would enter after their four years at the Academy and taking into account possible limitations. There are several different types of limitations for male and female cadets including both military regulations as well as individual skills or physical characteristics. The responses are combined into three general categories: operations (pilot, navigator, and missile

(Austin and Myint, 1971). Research has also explored occupational role models and reference groups of men and women choosing sex-typed and non-sex-typed careers (Angrist and Almquist, 1975). Other studies have explored relationships between social-psychological characteristics and careers including attitudes toward sex roles, personality traits and self concepts (Fanning, 1979).

Findings from these various lines of research have been contradictory which may reflect both the changing characteristics of those entering these occupations as well as the changing emphases of the studies. However, several statements can be made. Factors which have been related to male career choice and development are less important for females but they are not totally different. Also it is generally agreed that we should not use assumptions developed from male models of lifetime careers for women since marriage and family are more salient for them even though this is changing.

Research on problems of integration of work and family has substantiated that in planning careers women, more than men, actively take into account potential conflicts of work and family activities (Fogarty et al., 1971). However, it is interesting that one of the most important factors for women in combining work and family activities is the participation and support of male partners (Bielby, 1978). This is particularly true in terms of sharing household and child care tasks and being accomodative of work demands.

In general, researchers agree that work and family issues can no longer be regarded as individual problems. Features of work settings, employment policies, as well as child care provisions will have to change in conjunction with changing work patterns and work force composition. The same is true for military organizations--policies and orientations

females but the situation has changed and now a certain number are eligible for flying careers. Some congressional and Air Force restrictions remain in effect for women--specifically those related to jobs defined as linked to combat. It will be important to see how these affect long-term career and lifestyle patterns of women and to recognize that these restrictions also function as constraints on cadet career choices and their general thinking about military careers.

Until recently, marriage and family orientations in the military have been dominated by the fact that most participants have been males and it was assumed they had traditional supportive families. For example, the family has been regarded as a necessary part of military life and a supportive resource for male career development (particularly for officers). In the past, female officers adapted to such expectations by limiting their lifestyle to singleness (Goldman, 1973). In fact, until recently military policy limited the participation of married female personnel and if they became pregnant they were discharged. Obviously these policies have changed but it is doubtful that many attitudes or supportive services of military organizations will change as quickly.

Social scientists studying occupational choice and career development focused almost entirely on males until recently. Females were not included, or if they were, it was assumed that their career and life choices would follow very different patterns compared to males (e.g., Ginzberg, 1951). It has only been in the last decade that this research has changed and the number of studies focusing on women has increased.

Some of this research has investigated why and how women enter male-dominated fields. For example, studies have examined relationships of background characteristics of young women and their choice of careers

Patterson and Engelberg (1978) have discussed problems of women in medicine, law, and university teaching and point out that their difficulties are both short and long-term. In an immediate sense, women entering these fields are very visible and their total numbers are small. This means they face problems common to a "token" group in large formal organizations (Kanter, 1977). For example, in daily interaction women are expected to be both professional and "feminine" which often places them in contradictory and "no-win" situations. At the same time, women are excluded from much informal work interaction which impedes the development of needed contacts and sponsorship for future careers. Epstein (1970) has pointed out that women in male-dominated professions face major obstacles in developing long-term careers and coordinating these with personal lifestyles. This is because of both the structure of professions as well as existing occupational stereotypes in such male-dominated work.

More generally, in the American society, women have encountered a variety of competing demands and problems in their attempts to integrate work, marriage, and family. The foundations of these problems are work and family institutions which have developed and are maintained with assumptions of continuous lifetime careers supported by family arrangements. Changes in these assumptions and institutional patterns will occur very slowly. In looking ahead to female cadet careers and lifestyles, it can be anticipated that these same factors will be significant for them.

In terms of the Academy specifically, a number of factors are relevant. For example, the Air Force Academy has been regarded as the primary source of Air Force pilots so close to two-thirds of male graduates typically enter these fields. Until recently these fields were closed to

2. Are male and female cadets concerned about similar problems and who do they go to for advice and use as role models?
3. What types of marriage and family patterns do cadets anticipate and have these changed over time?
4. Do cadet career and lifestyle preferences vary in systematic ways with other attitudes and characteristics.
5. What are some implications of these findings for individuals as well as military organizations?

Before discussing the investigation of these questions, however, some background from prior research studies will be presented.

#### Changing Occupations and Career Development Patterns

Two general literatures are relevant to the above research questions-- studies of sex integration in different types of work organizations and studies of occupational choice and career development. First, we will outline some salient points concerning changes in sex-typed occupations-- including the military. Studies of sex-segregation occupations have focused primarily on women in male-dominated professions (such as engineering, law, etc.) and problems they encounter in obtaining access training and developing their careers (i.e., Stromberg and Harkess, 1970). There have been fewer studies of men in female-dominated fields but to a certain extent the problems and issues are similar (Grimm, 1978). However, there is at least one important difference--men in female fields tend to occupy more favorable positions compared to their female colleagues. This has not been the case for women in male-dominated fields.

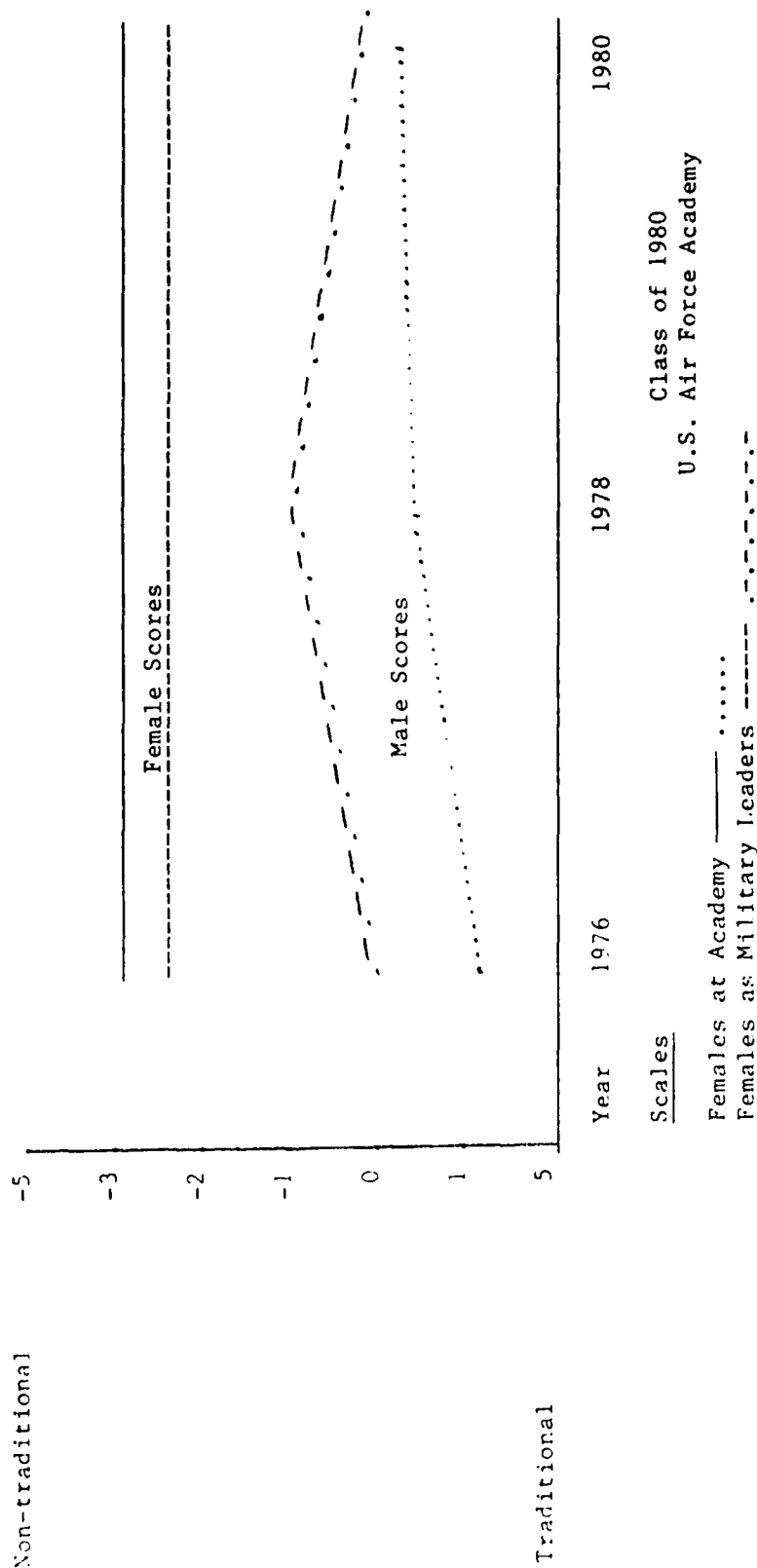
## The Development of Cadet Career and Lifestyle Plans

In recent decades a number of social and cultural changes have been taking place in the nature of work and family life in the United States. These are related to changing economic conditions and changing roles for men and women. In family life, changes have occurred primarily in the development of a wider range of familial relationships. Extended family ties have declined; the importance of nuclear families has diminished and a variety of life designs such as living alone, single parenting and cohabitation have become more prevalent. In work settings, the nature of work as well as the type of people working in different fields have changed. More education and training are required for entrance into jobs; high technology jobs as well as human service employment have increased and a number of previously all-male or all-female occupations have become integrated. Perhaps more important is that work and family activities have become increasingly interdependent in modern life. These no longer are simply changing institutional spheres which individuals must negotiate but rather trends which significantly affect social organizations as well. Because of the importance of work and family issues, the present project systematically investigated how these future Air Force officers viewed their future careers and lifestyles and the factors impinging on the development of these. Several times during Academy training cadets were asked about orientations toward work and family issues, and the data from these queries form the foundation for the present chapter. The following general questions will be addressed in this context.

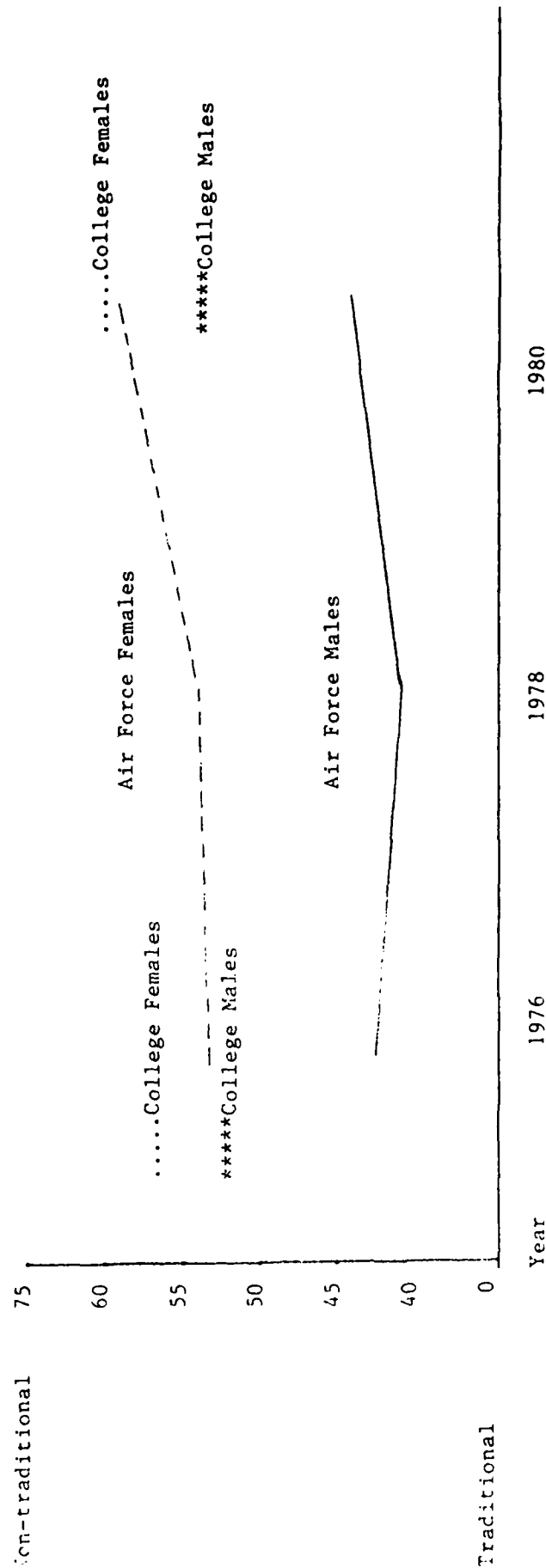
1. What are the career plans of male and female cadets and how have these changed over time?



# ATTITUDES TOWARD WOMEN IN MILITARY ROLES



# ATTITUDES TOWARD CHANGING ROLES FOR WOMEN



Class of 1980  
U.S. Air Force Academy

attainment are relevant. Questions probing these areas were asked twice during the four year period. Tables 5 and 6 contain male and female responses over time. Cadets are asked to indicate a specific career field they expect to enter and responses are grouped into three general categories--operations, operations support and administration, personnel, etc.

Information on career fields in Table 5 shows that over two-thirds of males expect to be in operations and this doesn't change over time. However, there is an increase in the numbers of males who expect to enter administrative, personnel and similar fields. The largest change is in the numbers of young women expecting to enter operational careers. Close to 40% finally say they will enter these fields after shifting from administration, personnel and similar areas. There are significant sex-linked differences which represent traditional sex-linked careers in military organizations and persist due to both organizational restrictions as well as cadet preferences.

Some female cadets express concern about prospects for future Air Force careers since traditionally promotions are strongly influenced by experiences in operational careers fields. At present, only a certain number of young women are able to enter these fields and even those who do will be limited because of restrictions concerning the utilization of women in combat-linked training. Over three-quarters of these young women think that combat restrictions should be changed while three-quarters of the young men disagree ( $\chi^2 = 34.01$ ,  $p = .000$ ). Somewhat related to this we find that many more young women, compared to men, believe that the importance of management and personnel activities in the Air Force has increased ( $\chi^2 = 9.89$ ,  $p = .03$ ). Obviously these young women hope the fields

they are entering will be evaluated increasingly positively for career advancement.

An indication of the career advancement cadets think they will have in the Air Force is provided by responses to questions concerning expected rank attainment (Table 6). At two points in time there are sex differences in these expectations and they are much greater in the final year of training since female responses change over time while male responses do not. By the end of training almost one-half of females indicate they expect to attain a rank up to Captain which means they anticipate more short-term careers than males (62% of males say they expect to attain a rank of between Major and Colonel).

There are probably a number of reasons for these sex-linked differences but from answers on other questions, we know that female cadets are concerned about their opportunities in the military given current restrictions. However, these young women also express a great deal of confidence in their abilities. This is illustrated in responses to a question asking how cadets evaluate their chances for progression through junior ranks in the Air Force. Female cadets are much more confident than males that they will be "fast burners" or likely to attain below the zone promotions ( $\chi^2 = 9.21$ ,  $p = .05$ ). These answers indicate that even though female cadets don't expect to have long-term Air Force careers--they are career oriented and very confident of their abilities.

In light of female career concerns, it isn't surprising they are generally less satisfied than males with their first assignment and the Air Force. Response patterns to a question concerning general satisfaction with the Air Force reveals that a large number of males are highly satisfied but some did say they are not satisfied. Female cadets, on the

other hand, indicate they are undecided or very mildly positive about the Air Force ( $\chi^2 = 16.35$ ,  $p = .002$ ).

Other significant factors in the development of career choices and commitments are processes of role modeling and more general influence patterns. These processes are particularly salient during periods of early occupational training since it is during this time that young people solidify beliefs, attitudes and expectations concerning their future. Studies have shown that during college years young people seek out information, opinions and beliefs to aid in decision making regarding careers and lifestyle patterns (Kemper, 1968). By investigating influence patterns and significant reference groups we are better able to understand why cadets, and other young people, are oriented toward a particular occupational field versus another or various lifestyles.

In the present study, modeling and influence patterns are probed via two types of questions. It will be recalled that cadets were asked about their problems and advice seeking patterns which is one way of finding out who influences their decisions in these areas. They were also asked specifically about the people they model themselves after.

In the prior section, advice seeking patterns were described and in general results indicate males and females are influenced by different people. Specifically, female cadets, compared to males, report wider spheres of influence and do not seek advice as frequently from Air Force officers. In the following paragraphs, we will describe who cadets regard as important role models at the Academy.

Two questions concerning role models approach the issue somewhat differently but both focus on Air Force personnel who cadets may have associated with during their Academy training. The first question asks how

much cadets would like to pattern themselves after different Air Force personnel. The second asks cadets to select their most important role models from this list. Results from these questions are presented on Table 7 in the form of mean scores indicating how strongly cadets want to be like Air Force personnel. The adjacent column on Table 7 lists how they rank these people as role models. Similar patterns emerge from both types of information. Male faculty members and former male cadets are the most important influences for both sexes. Basically, this is comparable to what is reported for civilian students who say faculty and peers are the most important influences during college (Angrist and Almquist, 1975). What is interesting is that female cadets don't regard female Air Force personnel as very significant for them. This is not comparable to information from other studies of young women entering male-dominated careers, such as engineering, or of general role modeling research (Patterson and Engelberg, 1978).

There are both differences and similarities between role models for males and females. Results of t-tests on Table 7 show males and females differ in their desires to be like former male cadets and various female staff members. Essentially males have a greater desire than females to be like former male cadets and males actively discount female staff as having influence on them. These differences are further substantiated by rankings of these people as role models. Results from a rank order correlation indicate that rankings of males and females are not highly associated ( $r_s = .18$ ).

What is interesting is that the primary military staff, as represented by AOC's, is not regarded as very important. Neither male nor female AOCs are highly ranked as role models and cadets do not have a strong desire to

pattern themselves after these individuals. OACs have a great deal of power over cadets in daily military life at the Academy but at the same time they are supposed to be models of Air Force officers for cadets. This is not happening and indicates that both the nature of the role and the types of officers recruited to the positions need to be changed. Other Academy staff and former upper class cadets clearly are more important models for this class, one final point concerning the lack of influence of female staff. This finding is not surprising in this setting since cadets undoubtedly perceive (correctly) that even the small number of females on the Academy staff have little power and influence. To change this perception requires changing the situation which will involve more than simply recruiting additional females to fill positions. The nature of the positions females officers are recruited to fill will have to change so that they do more than deal with "women's issues".

Information on cadet career plans and role models reveals a number of differences between males and females. It is not surprising that career choices are strongly differentiated by sex but there are no a priori reasons that male and female expectations for future careers in the Air Force should be different. Young women anticipate more short-term Air Force affiliation and report a much lower level of satisfaction with Air Force life and career assignments. They are less likely to seek advice from Air Force officers and to use them generally as role models. However, given responses to other questions we cannot conclude that these young women simply are less career and achievement oriented and thus have less interest in careers. Female cadets are skeptical about their future in the Air Force and think combat restrictions will hinder advancement. Also, at the present time, they envision a number of career and family conflicts, which

male cadets do not. We will discuss some of these perceived conflicts in the following section.

### Lifestyle Preferences and Career Conflicts

Anticipated marriage and family plans are different for males and females and they foresee different problems in carrying out these lifestyles. For example, over three-quarter of cadets say they plan on marrying but more females than males say they are uncertain about this or that they may not ever marry ( $\chi^2 = 8.92$ ,  $p = .06$ ). Responses concerning the likelihood of having children reveal that most cadets think they will have a family. Again, however, female responses change over time and as graduation approaches many young women become less certain about this (see Table 8).

At the same time, many more females than males are concerned about problems they will have in combining Air Force careers and marriage ( $\chi^2 = 16.62$ ,  $p = .005$ ). Similarly, more females are worried that being a parent will interrupt the development of their careers ( $\chi^2 = 18.68$ ,  $p = .005$ ). These responses are not particularly surprising since cadets subscribe strongly to both career and family goals, however, past research cautions that these responses need to be interpreted carefully. Studies have shown that, given gender socialization and training in our society, most high school and college age males still strongly orient themselves toward work roles and assume they will be aided in these areas by wives and families. While young men also subscribe to the notion that women should have activities outside of the home and work if they want to, males do not think these activities will or should seriously affect their own goals (Corder-Boldz and Stephen, 1979).



Young women approach issues of careers and families differently. They often express preferences for general lifestyles rather than thinking about choosing between the two. They recognize that if they work and have families it usually means they will assume the double burdens of work as well as household and child care tasks. Female cadets, as well as other young women, find it difficult and frustrating to solve those problems. Many young women espouse more of a contingency approach for their futures and approach work, marriage and family as flexible, adaptive phases in their lives rather than thinking of them in all or nothing terms or as continuous periods in their lives (Angrist and Almquist, 1975). We will examine how male and female cadets orient themselves toward such issues and how they anticipate solving some of these problems.

Both male and female cadets are strongly career oriented but female cadets do not anticipate as long-term careers in the Air Force as males and generally are not as satisfied with their situations in the Air Force. Females also anticipate more conflicts with career and family plans and responses in Table 9 illustrate the different ways male and female cadets approach such problems. This table contains lifestyle preferences of male and female cadets during their third and fourth years of training. As discussed, this scale consists of questions concerning expectations of future family composition as well as childcare options. Scores are calculated and divided at the mean into traditional and nontraditional lifestyle preferences. At both times there are clear differences between males and females with two-thirds of the young women saying they expect to be single, pursuing their careers even if married and using commercial childcare facilities if needed. In contrast, almost 60% of males say they are likely to be married with a noncareer spouse and strongly object to

options other than mothers caring for children. These orientations don't change much over time.

Again, on Table 10 we see sex differences in how cadets expect to resolve marriage and dual career problems. In this question they are presented with a situation of wanting to marry a person who also has a career and there are problems in carrying out these plans. Male cadets choose the more traditional solutions to these problems and decide not to marry the person or that one person should give up their career. Over time male answers don't change much. Young women say they are much more willing to make sacrifices such as living apart or even temporarily agreeing that only one person's career will take priority. Closer to graduation, however, these young women do not endorse these options as strongly and more consider it likely they will resolve dual career conflicts without as much willingness to sacrifice.

In comparing cadet lifestyle preferences with those of similar college age youth, we find both male and female cadets are different from their cohorts. For example, a greater proportion of male cadets, compared to college males, are oriented toward more traditional futures (Zuckerman, 1978). On the other hand, when we compare female cadets to other young women, we find more cadets expecting to marry and have families than their civilian counterparts in engineering and law (Bielby, 1978). However, as female cadets approach graduation and become somewhat more uncertain about marriage and family plans they become more similar to college women.

It may be, of course, that current cadet relationships with the opposite sex affects future plans and perceived problems. A questionnaire item was included at two points in time asking whether cadets were involved in more casual relationships such as dating different people, whether they

were going with one person but not certain about the future, or whether they were more involved and had definite future commitments (i.e., engaged). Table 11 contains the responses and indicates both sex differences as well as changes over time. Before the end of the last year of training most male cadets are not very heavily involved with young women but by graduation approximately one-third have commitments. The pattern is different for female cadets. Half way through their training close to one-half say they have commitments with the opposite sex but these decline significantly as graduation approaches and fewer young women than men say they have definite commitments. These changes are probably related to the kinds of people cadets become involved with. The majority of female cadets say they are involved with cadets and other military personnel while males say they are involved with local civilians or someone from outside the immediate area ( $\chi^2$  124.9,  $p = .000$ ). Given the sex ratio at the Academy, these differences are not surprising, but it is interesting that a number of young women pull back from relationships with other military personnel. As graduation nears, they must face directly career and family problems. Given the clear-cut attitude differences between males and females there are undoubtedly many conflicts which are not resolvable.

Data on cadet career and lifestyle orientations indicates several different patterns. Most male cadets prefer a rather traditional career, marriage and family adaptation. They expect to marry, have children and have continuous career development. They prefer to combine these in ways that involve clear-cut and separate activities for husbands and wives. Also, most still view females roles as both supportive and subordinate to male roles. There are, of course, a small number of male cadets who do not anticipate such traditional lifestyles. They are less anxious to enter

into marriage and are more willing to have different types of relationships with their spouse.

In contrast, there appears to be two different patterns among female cadets. While a significant proportion of female cadets think they eventually will marry and have children, there are approximately a third who are planning to marry rather soon after they begin their Air Force careers. These young women expect more traditional female careers within the Air Force and their rank expectations are concentrated in the ranks of captain and below. They also tend to prefer more traditional child-care arrangements and visualize their futures with central commitments to marriage and family. They may end up in situations where work and home roles are alternated in different phases of their lives (Fogarty et al., 1971). Thus, they may devote early adult years to training, education and establishing careers followed by a period when they drop out to bear and raise children then later return to work. These young women are headed in this direction but given current military policies they will not readily be able to return to military careers.

Another segment of female cadets are expecting more of a continuous career pattern with marriage and minimum interruption for child bearing (if they decide to have children). These say they think they will be single or in dual career families and indicate they will be more willing to sacrifice, even to the point of living apart, in the case of marriage and career conflicts. They also indicate a willingness to use outside agencies for child-care. These young women have fewer strong commitments to the opposite sex and some expect to attain a rank of major or above in their careers. At least some are headed toward nontraditional career fields such as pilot and navigator.

Finally, there is approximately one third of males and females who are uncertain about how they will work out these issues. They are willing to consider a number of options but are not enthusiastic about living apart because of dual careers or using commercial child-care facilities if they have children. At the same time, they say they will make some career compromises and will consider a non-relative taking care of children in the home. They are conflicted and hope when they are ready to make decisions there may be more options available, both within and outside the Air Force, to aid them in solving these problems.

But whatever the specific lifestyle preferences expressed by cadets, each presents different problems and strains for both individuals and military organizations. Eventually these will require adaptations on the part of military organizations. Before discussing these issues, however, we will assess whether cadet career choices and lifestyles vary in systematic ways with a number of cadet background and attitudinal characteristics.

#### Cadet Characteristics, Careers, and Lifestyles

Research investigating career and lifestyle choices has found differences in characteristics of males and females entering specific career fields as well as differences between females going into traditionally male or female fields. Some studies have examined socio-demographic characteristics of young people to obtain an indication of the types of men and women drawn to certain fields. The variables typically included are family socio-economic levels and indicators of family composition. At least several studies have found career oriented females,

particularly those entering male dominated fields, come from families of higher socio-economic levels (Tangri, 1972). It will be recalled that female cadets are from higher socio-economic backgrounds than male cadets. We will examine these variables again in more detail in terms of relationships to choices of Air Force careers and future lifestyles.

Another set of variables which have been incorporated into studies of career choices and development are social psychological variables such as attitudes toward changing sex roles, achievement orientations, and individual characteristics such as motivation and self concept. Studies utilizing these measures have found that young men typically have higher achievement orientations than young women. In this setting, however, a measure of occupational aspirations, shows that females have significantly higher scores than males. Other research found that men and women preparing for non-traditional sex-linked careers are more positive toward changing sex roles compared to those entering other fields (Wertheim et al., 1978). For example, in the recent study by Wertheim et al., there were more differences across several sex-linked career fields than between men and women within each occupation. This, of course, is not true in terms of most comparisons between male and female cadets--they differ on a number of attitudinal measures. Since the Wertheim et al. study used one attitude scale which cadets also completed, we compared average scores of cadets with scores of students in law, management, social work and education. On the Spence Attitudes Toward Women Scale, average scores of male cadets are significantly more traditional than young men in each field. In contrast, scores of female cadets are similar to young women in law, education and social work but are somewhat less traditional than young women in business schools.

Findings from such studies indicate that in many career areas there are increasing similarities between entering males and females, but in terms of military organizations, such as the present one, this is not the case. These differences have implications for interaction between the sexes, as we discussed in the prior chapter, as well as for career and lifestyle development. Before pulling together these implications, we first need to explore results of analyses of career and lifestyle patterns and cadet characteristics.

The first set of analyses focuses on possible relationships between male and female background characteristics, scores on several social psychological scales and career and lifestyle expectations immediately prior to graduation. Loglinear analysis is used, and we constructed a series of cross-classifications of background variables, social psychological scales and career and lifestyle plans. In the case of continuous variables (i.e., Attitudes Toward Women Scale) they were dichotomized.

It will be recalled that log-linear analysis is based on chi-square statistics and is comparable to analysis of variance in that the goals are to understand effects of variables and their interactions on a dependent variable. We begin with a simple model of independent and dependent variables and examine how it helps account for actual data patterns. The independent variables in these models are sex, background characteristics and attitudes with expected career field and lifestyle as dependent.

The plan is to analyze sex and each social psychological measure with expected Air Force careers and lifestyles. These analyses are the same but, of course, in each case specific combinations of variables change. For this reason we will not discuss all results in detail but instead will

present selected findings. For most sets of variables, analyses are summarized in a general way and some examples of results provided.

Initially sex and the five sociodemographic variables of mother's and father's education and mother's and father's occupation as well as cadet birth order are analyzed with future career fields. Results from analyses of father's occupation and cadet birth order yield few significant findings. That is, these variables are essentially independent. The analyses of sex and, in turn, father's education, mother's education and mother's occupation with expected career yield slightly different results. In each, it is clear that interaction of sex with career is needed to account for data patterns, they are not essentially independent. It is only when this interaction is added that we find a close-fitting model for data patterns. Results from the analysis of sex, mother's occupation and future career illustrate this pattern.

	<u>VARIABLE MODEL</u>	<u>D.F.</u>	<u>LIKELIHOOD RATIO <math>\chi^2</math></u>	<u>PROBABILITY</u>
1.	SM, C*	18	24.30	.1456
2.	SM, SC	16	5.99	.9883
3.	SM, MC	10	21.10	.0204
4.	SM, SC, MC	8	4.36	.8234

S = Sex of cadet; M = Mother's occupation; C = Expected career  
 \*.5 was added to each cell because of zero entries.

As we see, Model 2, which includes the interaction of sex and career, is both the closest fitting and most parsimonious model (as indicated by the low likelihood ratio and high probability level). While Model 4 also has a high probability level, it includes both main interaction terms, which is less parsimonious and the probability level is lower. These findings indicate strong links between specific career fields and sex in this military setting which was expected but not in such magnitude and with such consistency.



The analyses of sex, scores on the Occupational Aspiration Scale and Attitudes Toward Women Scale, and expected career fields yield similar results. Sex with occupational aspiration scores, attitudes toward women scores and career fields show that when interactions of sex and expected career are added to models it produces a closer fit than when interactions of sex and attitude scores are added. However, in each analysis we found the more complex model, with both main interactions, to be a better fit for actual data patterns. This means both sex and attitude scores are useful in understanding career field choices.

In the first four analyses of sex, background characteristics and lifestyle expectations, no strong relationships between variables are evident. Analyses of mother's and father's occupation, mother's and father's education and expected lifestyles yield high likelihood ratios and low probability levels which means these background variables (together with sex of cadet) are not particularly useful in understanding choice of lifestyle. Results are somewhat different in the analysis of sex, birth order and expected lifestyle. In this case both sex and birth order are necessary in order to fit data patterns.

Analyses of sex, social psychological scale scores and expected lifestyles show that both independent variables (sex and scale scores) are needed to understand the dependent variable (future lifestyle). For example, the analysis of sex, Attitudes Toward Women and lifestyle provides the following information.

	<u>VARIABLE MODEL</u>	<u>D.F.</u>	<u>LIKELIHOOD RATIO <math>\chi^2</math></u>	<u>PROBABILITY</u>
1.	SA, L	5	11.35	.0449
2.	SA, SL	4	2.45	.6543
3.	SA, AL	3	3.87	.2756
4.	SA, SL, AL	2	.11	.9480

S = Sex of cadet; A = Attitude Toward Women; L = Expected lifestyle

This indicates both sex and attitude scores are needed for understanding lifestyle patterns. Comparing Models 2, 3, and 4 we find that by adding the interaction of sex and lifestyle (Model 2) we obtain a higher probability than when interaction of attitude score and lifestyle is added (Model 3). However, when both interactions are included (Model 4) we come very close to reproducing actual data patterns ( $p = .9480$ ). Such results are not surprising since we might anticipate that general attitudes toward changing gender roles are related to the degree of traditionality of expected future lifestyles.

To explore fully other differences between male and female career and lifestyle choices we examined background variables and attitudes within each sex cross-classified according to type of career and lifestyle. This is done particularly with an eye to exploring possible differences between females heading for traditionally male Air Force careers (e.g., flying) and those heading toward other specialities. We also explore these categories among male cadets.

A series of chi-square tables are calculated for females classified according to career field, and each background or social psychological variable. We find no differences on these. In other words, in terms of the background and social psychological variables under study, young women heading toward more atypical Air Force careers in flying, etc., do not differ significantly from young women heading toward more traditional female military jobs in administration and personnel. We cross-classified

young men by career fields and the same variables. Once again chi-square tables indicate no differences among young men heading for flying compared to other careers.

As a final step, we cross classified males and females according to lifestyle plans and other variables. For females we find that the cross classification of lifestyle expectations by career fields is not significant. In other words, females with more or less traditional lifestyle orientations are almost equally distributed across career fields.

In other cross classifications there are only two differences. Among females choosing different lifestyles the chi-square values indicate young women preferring less traditional lifestyles come from families with professional fathers who have more education. (The probabilities for chi-square values were less than .02). There are no differences in characteristics of mothers of young women choosing different lifestyles.

Differences in cross classifications of males according to lifestyle and background characteristics are similar to females. That is, young men planning more non-traditional lifestyles are more likely to come from families with professional fathers with college or graduate degrees. It is interesting that the classification of lifestyles and expected careers of males is significant ( $\chi^2 = 8.04$ ,  $p = .01$ ). More young men preferring traditional lifestyles expect careers in administrative and personnel fields and not flying. This finding deviates from some stereotypes concerning pilots and their lifestyles. In general, these analyses make it clear that in the present setting there are few differences in background characteristics and attitudes among young men and women heading toward typical or atypical careers as defined in this military setting. Of course, overall sex differences persist.

Throughout loglinear and other analyses, sex of cadet emerges as the most important variable in understanding response patterns and relationships between variables. While we expected this to be the case, we did not anticipate it would occur as consistently and strongly as it did. Prior studies of males and females entering typical or atypical occupations led us to hypothesize some differences in background variables which we did not find. Also both attitudes and sex of cadets are helpful for understanding career field patterns which is in contrast to recent findings indicating increasingly attitudinal convergence among males and females in a number of fields. Thus, these results are not useful in predicting cadets who are heading toward different lifestyles or careers except in general terms of males compared to females with some consideration of their attitudes.

#### Implications

As we have seen, young men and women attending the Air Force Academy are both similar as well as different from each other in their characteristics and orientations. Both males and females struggle to complete the multi-faceted program at the Academy, but given the nature of the institution and the positive evaluation of traditional male-linked characteristics and career activities, each sex develops and adapts differently in this setting. This is illustrated in the dimensions of career and lifestyle decision making reported in the present chapter. In a broader context, these findings are relevant to a number of military personnel and family issues and policies.

Given the range of careers and lifestyles expected by these respondents, a number of military policies need to be examined in terms of

how they impinge on a variety of work and family styles. Data presented indicates differences between male and female career and lifestyle expectations as well as increasing diversity in these expectations. Military organizations are expressing concern about such issues since personnel recruitment, retention rates and organizational efficiency are all affected. These concerns have led to some policy changes as well as the development of some family-oriented human relations and community services. However, family and work policies are interwoven with more general issues in the military concerning the utilization of women and women in combat.

In terms of recruitment and utilization of women, a number of problems remain and we have touched on some of them in prior sections. For example, we reported that both male and female cadets believe females are not really a part of Air Force Academy life and female cadets perceive indications of this in their treatment by various military staff and cadets. It is not surprising, then, that females compared to males don't use Air Force officers as frequently as advisors or feel as strongly about officers as significant role models. Female cadets are not highly satisfied with being in the Air Force and perceive that it is unlikely that they or other women will occupy important positions in the military. This is partly because combat experiences are closed to them and they feel very strongly that such restrictions should be changed. Since this is not likely to occur in the near future and they are concerned about the ability of military organizations to accommodate their lifestyle plans, most of these young women don't anticipate long-term Air Force careers even though they are strongly career oriented.

Male cadets are much more satisfied with their anticipated careers in the Air Force but significant elements affecting this are the initiation of careers they want and the realization they probably will be able to attain their expected rank levels. Also, they currently feel very strongly about traditional marriage and family patterns and think they will implement these without many problems. Given broader social and economic trends this may or may not work out as smoothly as they anticipate.

Since most female cadets are quite strongly committed to marriage as well as careers, a significant proportion probably are heading toward dual careers. In addition, more male cadets may be in these situations later than is apparent from current plans. Males and females trying to carry out dual careers experience a number of ambiguities and strains. These are difficult to solve and in some cases lead to the dissolution of marriages and families.

Research has shown that females in dual career families report internal as well as external stress (Holmstrom, 1972). These develop because women find it difficult to reconcile their conceptions of home and family with career pressures. Often they feel inadequate in one or both areas. Women report it is difficult to create feelings of equity when both partners are strongly committed to careers (Rapoport and Rapoport, 1978). In addition, married women are frustrated in their work because they don't think they are taken seriously in many career fields. Williams found that Air Force women in dual career families expressed this concern. They also were anxious concerning the effects of their career on their spouse's future in the Air Force given their inability to carry out many traditional obligations of military wives (Williams, 1980).

Males in dual career families also express ambiguities and strain. They often find it difficult to adopt egalitarian practices in the home and have problems genuinely committing themselves to career advancement for wives (Rapoport and Rapoport, 1978). Such orientations are central to the success of dual career lifestyles and where they are able to work these out couples report a high level of marital satisfaction. Dual career families need a high level of consensus on issues as well as concerted efforts to redefine traditional male/female family activities. The large differences in orientations of male and female cadets will make it difficult for many of them in dual career situations. It is essential for military organizations to recognize these strains and take steps to help members alleviate them.

Basically the central issue in the integration of work and family is the necessity of providing increased flexibility and options in these activities. Suggestions for meeting this goal include flexible work schedules, more variation in the structuring of careers and jobs and greater utilization of part-time work. Along these lines, the military needs to go beyond dual assignments and consider possibilities for different work and career patterns. For example, are frequent changes in assignments essential for most personnel? How many remote tours are needed and could these assignments be handled differently? Are there additional options for career advancement beyond those currently followed?

One consideration is to allow for more interruption in military careers. At present, policies provide for maternity leaves but perhaps longer child rearing leaves and part-time work could be considered. Most female cadets are committed to careers but not necessarily in affiliation with the Air Force. The training investment expended already for cadets is

considerable and it is desirable to develop provisions that allow for utilization of these officers over a longer period of time. The military should actively consider suggestions for alternate periods of work and family. One possibility is for officers to be on a standby or part-time basis for a period of time without losing seniority and benefits. Additional child-care and family related facilities definitely are needed since this is an area of great concern to both males and females.

Reconsideration of the need and endorsement of a specific family pattern in the military is essential. How important is it to the career of an officer to have a person occupying the hostess role? Perhaps it isn't as central as imagined. A recent study of dual career families found that some of the most successful males had only minimal amounts of family social support (Holmstrom, 1972). This was true even in organizations with a strong verbal allegiance to such requirements. In fact, most men and their families reported career support could be cut drastically without hurting advancement and when social activities were needed, they could be facilitated through outside help. The questioning of such assumptions and development of greater tolerance and legitimation of a variety of lifestyles will benefit military organizations as well as their members. At the present time, military men and women who do not conform to traditional family models often experience discomfort and even informal sanctions.

In general, military policies and orientations need to be reexamined with an eye to implications for the integration of work and family. As this research and others are finding, more people are opting for a greater variety of work and family styles and the military will have to make changes to recruit and maintain personnel.



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TABLE 1  
MOST IMPORTANT PROBLEMS FACING CADETS  
YEAR 1

PROBLEM	MALE (N=90)		FEMALE (N=86)	
	1st Choice %	2nd Choice %	1st Choice %	2nd Choice %
Military-related	4.3	16.3	6.0	10.8
Career Choice	39.4	18.5	41.0	15.7
Academic	25.0	14.1	20.5	16.9
Family	3.3	8.7	2.4	9.6
Religious	4.3	3.3	2.4	8.4
Financial	3.3	10.9	0.0	2.4
Sex-role/Career Conflicts	2.2	1.1	4.8	8.4
Relationships with Opposite Sex	8.7	13.0	13.3	12.0
Military Morality Issues	4.3	5.4	1.2	9.6
Peer Relationships	5.4	8.7	8.4	6.0

Male v. Female (1st choice)      Male v. Female (2nd Choice)

$\chi^2 = 7.77$   
df = 9  
p =

$\chi^2 = 14.65$   
df = 9  
p = .08

older people, it is necessary for individuals to learn and relearn behaviors, attitudes, and values appropriate to positions in various groups. A major arena of socialization for adults is the work world and the nature of socializing experiences vary from one work setting to another. Training for professions, which frequently takes place in "professional schools", is particularly intensive. In this training, which occurs over a period of years, the neophyte is expected to acquire not only the requisite knowledge and skills needed to the work but also dominant values, beliefs and orientations of the profession (Moore, 1970). Thus, an important aspect of such socialization is the acquisition of shared world views related to the practice of the professional activity. This is true also for military work. In the present project, cadets will be questioned at several points in time concerning their endorsement of a number of central military values and beliefs.

Military groups share a number of orientations which have been characterized as "the military subculture" (Wamsley, 1972). It is the goal of military groups to inculcate these views through socialization procedures such as basic training programs for enlisted recruits, officer candidate schools, service academies, and the like. Wamsley maintains that fundamental aspects of the military subculture are introduced early in training and become elaborated and stronger as military experience increases. He outlines the following themes of the military subculture:

1. acceptance of all-pervasive hierarchy and deference patterns;
2. extreme emphasis on dress, bearing and grooming;
3. specialized vocabulary;
4. emphasis on honor, integrity and professional responsibility;
5. emphasis on brotherhood;

socialization. However, we must recognize that the service academy is a specialized military group and its socialization procedures and evaluations must be placed in more general perspective.

Social scientists emphasize the importance of socialization occurring early in an individual's life as particularly significant in the development of individual traits and self concepts. During infancy, children learn to differentiate themselves from their environment, and through the influence of family and other groups they develop notions of their distinctive characteristics. One of the most significant aspects of this learning involves gender differentiation. Even very young children conceive of themselves as male or female and have some idea of what this means in terms of desirable traits and social interaction. Longitudinal studies, following the same people from an early age through adulthood, reveal that some gender-related characteristics remain rather stable but others change (Kagan and Moss, 1962). For example, activity levels and introversion or extroversion appear to be rather stable traits in both sexes while other dimensions such as independence-dependence, assertiveness and emotionality may change depending on the specific influences in different periods of a person's life (Maccoby and Jacklin, 1974). We all have concepts of ourselves as masculine, feminine or some combination of these which are learned in social settings and thus are susceptible to change. Military organizations traditionally have stressed traits associated with masculinity so we are particularly interested in cadet self assessments when they enter the Air Force Academy and how, if at all, these change after an extended period of military training.

While socialization is intensive during the early years of a person's life, it continues throughout the life cycle. As adolescents, adults and

### Socialization Process

Socialization is a central sociological concept referring to processes through which individuals acquire knowledge, skills and orientations which enable them to function in various social groups (Brim, 1966). Outcomes can be assessed from either organizational or individual points of view. For example, it is essential to the continued existence of groups that new members learn roles, values and orientations needed to function in these groups. Thus, the Air Force Academy, as well as other organizations, devise a variety of procedures to transmit desired skills and orientations to neophytes. Outcomes of these efforts are measured using a number of indicators, and if completed satisfactorily, individuals are accepted as full-fledge group members; certified to carry out special activities; formally commissioned into new roles; and usually informally accepted in social relationships. The Air Force Academy, like other military organizations, uses rather distinct, often harsh, socialization procedures to insure new members will be able to function in groups charged with carrying out demanding, defensive, disciplined activities. Military groups generally place strong emphasis on socialization procedures as well as the assessment of outcomes.

From the point of view of individuals, socialization is conceived of as the development of change in self-concept, attitudes, values and other dispositions. The specific nature of these changes depends on the configuration of social influences individuals are exposed to. In the present study the emphasis is in terms of individual change after an extended period of military socialization. We will consider how cadet self-concepts, attitudes and other orientations change during this

## Socialization of Air Force Cadets

What types of changes, if any, do cadets experience as they undergo four years of training at the Academy? Obviously they learn to perform a variety of specific tasks and prepare to assume general military leadership positions but there is more to such educational and occupational socialization than simply learning tasks and acquiring general abilities. Research findings indicate that individuals often change their values, attitudes and beliefs during such training. The purpose of the present chapter is to assess a number of different types of changes in male and female cadets during the four year Academy experience.

Specifically, various sections of the chapter will address the following issues:

1. What are the distinctive Academy experiences and activities of male and female cadets and how do they evaluate these?
2. Are there similarities and/or differences in the endorsements of military values and social psychological characteristics of male and female cadets and how are these interrelated?
3. Do cadet endorsements of military values and social psychological characteristics change during Academy training?
4. What is the significance of these research findings for both cadets and the Academy?

In order to address these issues adequately, some background research concerning general socialization processes will be discussed. In addition, the nature and measurement of social psychological variables under study will be outlined before turning to an examination of the survey findings.



TABLE 11  
RELATIONSHIPS WITH OPPOSITE SEX

<u>Type of Relationship</u>	Year 3		Year 4	
	Male	Female	Male	Female
	<u>%</u>		<u>%</u>	
Dating and spending time with friends	58.4	33.3	37.1	34.6
Going with one person	23.9	26.4	30.3	35.9
Steady relationship with commitment	17.7	40.3	32.6	29.5
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
M = 90	M vs F		M vs F	
F = 83	$\chi^2 = 23.11$		$\chi^2 = 2.90$	
	p = .000		p = .50	

TABLE 10  
HOW TO RESOLVE MARRIAGE AND DUAL CAREER PROBLEMS

<u>Resolution</u>	Year 3		Year 4	
	Male	Female	Male	Female
	<u>%</u>		<u>%</u>	
Decide not to marry person	11.8	5.7	11.5	6.0
Marry but both people sacrifice	8.7	18.4	8.0	11.2
Marry and let one career temporarily take priority	55.0	66.7	59.9	70.9
Marry but one person give up career	24.6	9.2	20.5	12.0
	<u>100.1</u>	<u>100.0</u>	<u>99.9</u>	<u>100.1</u>
M = 88	$\chi^2 = 8.84$		$\chi^2 = 4.54$	
F = 83	p = .04		p = .10	

TABLE 9  
LIFESTYLE PREFERENCES

<u>Type of Lifestyle</u>	Year 3		Year 4	
	Male	Female	Male	Female
	<u>%</u>		<u>%</u>	
Nontraditional	41.7	69.6	44.0	66.6
Traditional	58.3	30.4	56.0	33.4
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
M = 87	$\chi^2 = 21.52$		$\chi^2 = 18.92$	
F = 83	p = .000		p = .000	

TABLE 8  
ATTITUDES TOWARD HAVING CHILDREN

<u>Response</u>	Year 3		Year 4	
	Male	Female	Male	Female
	<u>%</u>		<u>%</u>	
Will have children	85.7	77.3	84.5	70.4
Don't know	11.9	17.0	11.9	19.0
Will not have children	2.4	5.7	3.6	10.5
	<hr/>	<hr/>	<hr/>	<hr/>
	100.0	100.0	100.0	99.9
M = 89	$\chi^2 = 3.39$		$\chi^2 = 7.47$	
F = 84	p = .30		p = .05	

TABLE 7

ACADEMY PERSONNEL WHO CADETS WANT TO BE LIKE  
AND USE AS ROLE MODELS

PERSON	Males (N=90)		Females (N=86)		t Values and Probability Values for X Score Differences
	*X Scores	Role Model Ranking	*X Scores	Role Model Ranking	
Male AOC	2.64	4	2.84	4	-0.28 .782
Female AOC	3.99	0**	3.76	0	1.29 .200
Male Faculty Member	1.70	1	1.83	1	-1.08 .284
Female Faculty Member	3.50	0	2.93	3	2.09 .038
Male Athletic Staff	2.39	5	2.69	0	-1.56 .122
Female Athletic Staff	3.56	0	2.96	6	2.92 .004
Other Male Air Force Personnel	2.04	2	2.25	5	-1.25 .214
Other Female Air Force Personnel	3.77	0	2.98	7	2.93 .010
Former Male Cadets	2.00	3	2.63	2	-2.46 .015

\* Scores range from 1 to 5 with a low score indicating a greater desire to be like the person.

\*\* No cadets indicate they regard these people as role models.

TABLE 6

## FUTURE AIR FORCE RANK CADETS EXPECT TO ATTAIN

<u>Rank Level</u>	Year 2		Year 4	
	Male	Female	Male	Female
	<u>%</u>		<u>%</u>	
Lietenant through Captain	11.6	20.9	17.9	41.9
Major through Colonel	67.4	65.1	62.1	45.3
General Officer	21.1	14.0	20.0	12.0
	<u>100.1</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
M = 95	$\chi^2 = 5.09$		$\chi^2 = 12.61$	
F = 86	p = .06		p = .001	

TABLE 5  
CAREER FIELDS CADETS EXPECT TO ENTER

<u>Career Field</u>	Year 3		Year 4	
	Male	Female	Male	Female
	<u>%</u>		<u>%</u>	
Operations	70.5	16.7	71.6	39.3
Operations Support	10.5	27.4	3.2	15.5
Administration, Personnel and Others	18.9	56.0	25.3	45.2
	99.9	100.1	100.0	100.0
M = 95	$\chi^2 = 23.21$		$\chi^2 = 16.72$	
F = 86	p = .000		p = .000	

TABLE 4  
MEAN RESPONSES OF MALES AND FEMALES ON  
OCCUPATIONAL ASPIRATIONAL SCALE

SAMPLE	$\bar{X}$ 's	N	t value	p (2-tailed)
Male Cadets	53.6	87	2.25	.01
Female Cadets	56.1	85		
Civilian Males*	47.3	131	1.08	not significant
Civilian Females	48.2	120		

\*Scores from Hotchkiss et al., 1979.



TABLE 3

## CLASS OF 1980 RESPONSE TO:

If you had enough money to live comfortably, do you think  
you would pursue a full-time career?

<u>Response</u>	Year 3		Year 4	
	Male	Female	Male	Female
	<u>%</u>		<u>%</u>	
Would pursue career	77.7	69.0	76.5	74.8
Undecided	3.6	11.5	6.7	12.1
Would not pursue career	18.8	19.5	16.8	13.1
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
M = 89	$\chi^2 = 8.10$		$\chi^2 = 5.08$	
F = 84	p = .02		p = .27	

TABLE 2  
MOST IMPORTANT PROBLEMS FACING CADETS  
YEAR 4

PROBLEM	MALE (N=89)		FEMALE (N=84)	
	1st Choice %	2nd Choice %	1st Choice %	2nd Choice %
Military-related	4.2	2.1	1.2	10.7
Career Choice	36.8	22.1	45.2	15.5
Academic	24.2	17.9	14.3	11.9
Family	1.1	5.3	4.8	4.8
Religious	4.2	4.2	1.2	2.4
Financial	10.5	21.1	1.2	10.7
Sex-role/Career Conflicts	0.0	3.2	14.3	14.3
Relationships with Opposite Sex	12.6	10.5	7.1	19.0
Military Morality Issues	2.1	9.5	9.5	1.2
Peer Relationships	4.2	4.2	1.2	9.5

Male v. Female (1st Choice)

$\chi^2 = 35.21$   
df = 9  
p = .000

Male v. Female (2nd Choice)

$\chi^2 = 27.05$   
df = 9  
p = .001

6. fighter spirit marked by aggressive enthusiasm;
7. special reverence for history and tradition;
8. social proximity for dependents (Wamsley, 1972:401).

In his participant-observation study of two Air Force programs, Wamsley found recruits increasingly adopted these values and orientations as they advanced in their training.

Lovell's studies of military service academies have stressed somewhat similar points (Lovell, 1964 and 1976). In his early study of West Point, for example, Lovell found that cadets during the four years at the Academy changed only slightly in orientations toward professional roles and international relations; however, cadets from different social backgrounds became more homogeneous in their orientations. This was particularly true for basic military values of "duty, honor and loyalty to country". In the present survey of Air Force Academy cadets, we operationalize the themes of the military subculture in order to measure changing endorsements indicating military socialization.

Since the proportion of females entering military groups has increased significantly in recent years, writers have speculated that some aspects of military socialization will change. For example, Arkin and Dobrofsky (1977) describe the masculine-warrior model as dominating military training and point out that this is difficult to adapt in the training of women. This is primarily because of emphasis on physical fitness, combat skills, and male sexuality. They characterize key themes in military training as coterminous with what are regarded as masculine traits of aggression, strength, endurance, toughness and courage. Thus, the military claims its basic training programs "make a man out of you" and that they have not changed programs to accommodate women. In fact, women often do not perform

comparable to men in a number of areas stressing physical skills which has caused much consternation for some military leaders. At the same time, the military expressed concern that young women who undergo military training may "lose their femininity". This poses a dilemma in terms of providing women needed military training but at the same time vowing not to change or adapt such training. One of the aims of the present project is to measure cadet assessments of their masculinity and femininity at several points in time during military training.

The following sections will report findings from the longitudinal surveys of cadets and will address some of the salient issues from prior research studies. To do this, indicators of key variables are measured at several points in time and comparisons made between males and females. After describing the measurement of variables we turn to the research findings.

#### Measurement of Variables

Most of the variable indicators used in this chapter's analyses are measures of various social psychological characteristics relevant to military socialization in a sex-integrated setting. Thus variables such as attitudes toward women, conceptions of masculinity and femininity, achievement orientations, and military values are included. These variables have been widely used in prior sociological and psychological studies and a number of verified scales are available to measure them. In the following pages we describe each scale, the variable it measures and why it was selected. Several of these scales have been discussed in preceding chapters, but will be reviewed again in this context.

Supplementing social psychological measures are some miscellaneous items designed to obtain information regarding cadet involvement in Academy variables have been widely used in prior sociological and psychological studies and a number of verified scales are available to measure them. In the following pages we describe each scale, the variable it measures and why it was selected. Several of these scales have been discussed in preceding chapters, but will be reviewed again in this context.

Supplementing social psychological measures are some miscellaneous items designed to obtain information regarding cadet involvement in Academy activities and assessments of success in these. While all cadets participate in the same basic program there are variations in activities and leadership. Also, several measures of cadet performance at the Academy are included. Specifically, recent grade point and military proficiency averages will be used in analyses with social psychological scales.

We begin with a review of the several attitudes scales which are described in detail in Chapter Two. To measure attitudes toward changing roles for women in military and nonmilitary settings, three scales are used. One which measures attitudes toward changing societal roles is the Spence-Helmreich Attitudes Toward Women Scale. It contains 25 statements posing both traditional and nontraditional expectations which respondents are asked to agree or disagree with. The items tap attitudes toward roles and rights of women in work, education, and family activities. Even though the content and format of this scale have been criticized, it has been administered to many different samples of the general population. Scores range from 0 to 75, with lower scores representing more traditional attitudes toward women and higher ones less traditional.

Two short scales were constructed to measure cadet attitudes toward the participation of women in military activities. These were developed from factor analyses of a questionnaire administered to a sample of cadets and subsequently used in the longitudinal study. One scale consists of four questions which probe attitudes toward the inclusion of women at the Air Force Academy and the other contains five questions measuring attitudes toward women in military leadership and combat roles. Scores on these scales range from -4 to +4 with higher negative scores representing less traditional views. Analyses of change over time in these three attitudes are summarized in Chapter Two. There are strong differences between male and female attitudes on all scales and these persist over time. In this chapter, however, the focus is primarily in terms of relationships between these attitudes and other social psychological characteristics.

Analysis of cadet career and lifestyle plans in the prior chapter used scores of the Occupational Aspirations Scale (OAS) and we will review it as well as describe a similar scale measuring achievement motivation. The Occupational Aspirations Scale is designed to measure cognitive assessments individuals make regarding both idealistic and realistic possibilities for future educational and occupational attainment (Haller et al., 1974). The scale consists of eight items which ask respondents to choose from lists of occupations they regard as both idealistic and realistic future choices. The score represents higher or lower prestige occupations an individual sees as acceptable for him or herself. Cadet scores on this scale provide an indication of general level of aspiration and range from 8 to 72 with higher scores representing higher aspirations.

Cadets were also asked to complete a scale of achievement motivation during their second year at the Academy. The Ghiselli Achievement

Motivation scale was developed in an industrial setting with the goal of differentiating individuals who want to strive for high-level positions from those who are not motivated to move beyond most of their associates (Ghiselli, 1971). It has been administered to a variety of workers, supervisors, managers, executives, etc. and differentiates between those currently in various organizational levels as well as those who express goals of moving into higher level positions. The measure contains a number of terms individuals are asked to endorse and the patterning of answers provides an indication of the extent of achievement oriented values and motivations. Scores range from 20 to 60 with higher scores representing higher achievement motivation.

A scale was developed specifically for this project to measure values and orientations of the "military subculture" (Wamsley, 1972). As discussed, all professions, including the military, develop a core of beliefs, orientations and values related to the practice of their activities. While there have been several research studies assessing how recruits learn these orientations, no established scale exists to measure this variable. Questionnaire items were developed to tap dimensions of the subculture and a sample of cadets was asked to indicate their endorsement of these items. These data were factor analyzed yielding two clusters of items, or factors, which share common dimensions and contain a large number of beliefs and values delineated in prior research studies. These factors, or subscales, include items concerning the importance of the chain of command, a strong sense of honor, loyalty and duty as well as the importance of dress, general appearance and "a fighting spirit". Cadets in the sample indicated their agreement or disagreement with these items both in the first and last years of training. Scores range from -2 to +2 with

higher positive values indicating more enthusiastic endorsement of the military subculture.

Dominant emphases in Academy programs and activities are traditionally masculine traits, so it was hypothesized that female cadets would experience some difficulties not shared by male classmates. To explore cadet reactions to program emphases several social psychological scales which measure responses to organizational expectations were included in questionnaires and cadets were asked to assess their own masculine and feminine traits. Measures of masculinity and femininity were included during the first and last years of training and measures of role conflict and ambiguity were administered to cadets during their second year.

The literature on bureaucratic organization suggests that when behaviors expected of an individual are either inconsistent, or there is lack of necessary information, there is a strong likelihood that individual performance and satisfaction will be affected (Blau and Scott, 1962). In general, military organizations make clear the behaviors and orientations expected from their members. However, this may not be as true for women; and to assess this issue, the Rizzo et al., 1970, measures of role conflict and role ambiguity were used. These scales were developed in an industrial setting and consist of fourteen items that the subject is asked to respond to indicating the degree to which these conditions exist for him or her. The six items measuring role ambiguity ask whether an individual knows exactly what is expected of him or her, whether they have clear, planned goals and if they are certain about the authority they have. The eight items of the role conflict scale ask, for example, whether subjects receive incompatible requests from two or more people, whether they are asked to work on unnecessary things, and if they work with two or more groups who



operate quite differently. Scores on each scale range from 1 to 7 with higher scores indicating more role conflict or ambiguity.

Several measures of self-ascribed masculine and feminine attributes have been developed and considerable data available regarding the distribution of these traits and their relationship to other attitudes, behavior and orientation have been accumulated (e.g., Bem, 1974; Spence and Helmreich, 1978).

A central point all investigators stress is that masculinity and femininity have traditionally been conceived of as bipolar opposites which either do or do not characterize individuals, but this is no longer a valid and useful approach since individuals are characterized by varying amounts of both traits. Bem (1974) suggests these traits may change somewhat depending on the specific situations and positions individuals enter at different times in their lives. We measured cadet self-ascriptions of these traits using the Bem Sex-Role Inventory (1974) which consists of 60 adjectives the respondent uses to describe him or herself. There are twenty masculine, feminine and neutral items based on the desirability of these traits for males and females in the American society. Traits such as aggressive, ambitious, independent, competitive are listed as masculine while compassionate, affectionate and sympathetic are feminine and traits such as conceited, happy and sincere are included as neutral.

Individuals receive mean scores on both masculine and feminine adjectives; but using scores on both scales, Bem classifies individuals into one of four categories representing trait constellations. Based upon median scores, subjects are classified as masculine (high masculine-low feminine), feminine (high feminine-low masculine), androgynous (high masculine-high feminine) or undifferentiated (low masculine-low feminine).

In reporting results from this scale we will use mean scores on masculinity and femininity which range from 1 (low) to 7 (high) as well as proportions of cadets in each of the four categories.

Some social psychologists maintain that to understand more fully how people learn in various social settings it is necessary to assess generalized beliefs regarding causal links between individual abilities and control of factors in the environment. This emphasis developed out of social learning and reinforcement theory where clear distinctions are made in terms of the quality and quantity of learning which take place in conditions individuals perceive to be dependent on skills compared to conditions perceived to be determined by chance or fate.

Rotter (1966) has investigated the psychological bases of perceptions of individual-environment causality in terms of what he labels internal and external control expectations. The differences are in terms of:

...the degree to which the individual perceives that the reward follows from, or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside of himself and may occur independently of his own actions (Rotter, 1966:1).

This psychological attribute is important because it has been shown to be related to other social psychological characteristics such as competence and achievement orientation. In the present setting, internal-external control beliefs may be related to Academy adjustments and have implications for military performance. Thus, scores on the internal-external scale will be related to grade point and military proficiency averages as well as achievement motivation and masculinity-femininity. The scale was administered at two points in time to measure how, if at all, cadets change after three years of Academy training.

The specific instrument Rotter developed to test beliefs regarding control of environment consists of twenty-three items each containing two

statements which an individual has to choose between in terms of what he or she believes to be most consistent with his or her own beliefs. Rotter included six filler items to make the purposes of the tests less obvious. The score an individual receives is the total number of external choices he or she endorses with higher scores indicating stronger conceptions of external controls.

During the last year of training, some questionnaire items were included to assess the extent of cadet involvement in different Academy activities. Cadets responded to questions concerning their participation in areas such as special academic programs, intramural athletics, cadet military administration and extracurricular programs. They indicated whether they have no or minimal involvement or heavy involvement as leaders in these areas.

Cadets were also asked to evaluate, in a general way, their success in Academy programs--academics, athletics, and military. They were asked which areas they thought they were most successful in; or were more successful than expected or were happy simply to make it through.

Finally, some recent grade point and military proficiency averages were included and related to other measures. In the following sections, cadet responses on all measures are reported both in tabular as well as statistical formats. A variety of statistical techniques are used and each will be discussed briefly in conjunction with the findings.

#### Academy Experiences and Activities

Cadets take a large core academic program. Basic elements of military training are comparable for all and cadets participate in a sequence of athletic activities. However, in some areas of Academy life cadets make

choices regarding participation and differences emerge for different categories of youth. Even in structural activities there are differences in the extent of individual participation and it is likely cadets evaluate programs and their participation somewhat differently, which could have an impact on socialization. Cadet perceptions of specific programs were obtained from some separate items while a more general assessment of role expectations were measured using the Rizzo scale.

Table One summarizes cadet reports of involvement in a range of Academy activities. Generally, the data show significantly more male involvement in the intramural athletics, special academic activities and military training while females are significantly more involved in intercollegiate athletics and extracurricular activities. However, another patterning of responses emerges for a number of the activities even though differences between the sexes did not reach .05 level of significance in chi-square analyses. In reported involvement for regular academic programs, summer military activities as well as administration of the cadet wing, female cadets say they are involved and occasionally are leaders while more often male cadets indicate minimal involvement and, at the same time, high levels of leadership. Thus, while female cadets say they are participating in a variety of activities and may occasionally be leaders, this sample of male cadets reports that when they become involved in an activity they more often tend to move into leadership positions.

Another series of questions asked cadets to evaluate their success in the general areas of academics, athletics, military activities and other activities. In both academics and athletics, male as well as female cadets say they are fairly successful. Both sexes also report they are fairly successful in military activities, but many more males report they are very

successful in this area while females say they have been very successful in activities such as councils, clubs, etc. These assessments are basically consistent with reported levels of involvement and leadership. Three additional questions ask cadets to indicate which of the four areas they think they are most successful in, are more successful than expected, or are just happy to get through. Response patterns are similar for males and females in their indication of most successful areas--about one-quarter are in each area. However, response distributions are quite different for males and females in terms of areas they say they are most successful than expected or are just happy to get through. On both questions many more females point to athletics as a difficult area while males say they are more successful than expected in military activities and are most happy to make it through academics ( $\chi^2$  6.55  $p$  = .08; and  $\chi^2$  = 7.75  $p$  = .05). Female responses are consistent with evaluations of their performance in field training during the first year basic cadet training--they said many physical activities are difficult but once they complete them, they are very positive in assessments of performance and success. Male cadets and officers use different standards in their evaluations and place greater emphasis on athletic activities so their evaluations of female performance and success are negative.

Table Two presents cadet scores on Rizzo's role ambiguity and role conflict scales during the second year of training. As the scores indicate, cadets do not reveal a great deal of role ambiguity and, in fact, their scores are significantly lower than civilian workers ( $t$  = 2.76,  $p$  = .03). However, female cadets report more ambiguity than males, indicating they are somewhat less certain what is expected of them and how much authority they have in some roles. In contrast, scores on the role conflict scale are considerably higher, indicating cadets think they are faced with inconsistent expectations

and have to behave quite differently in different groups at the Academy. Scores are similar for both sexes and are similar to civilians ( $t = 1.26$ ,  $p = .15$ ).

What emerges, then, are descriptions of the somewhat different experiences and evaluations of male and female cadets. Females are participating in a wide range of activities but males dominate leadership and particularly in traditional areas of military activities and athletics (even though these young women are exceedingly active in competitive female sports). While female cadets express more ambiguity in their understanding of expectations, they still think they perform well in most areas but are not as positive in their self-evaluations as male cadets. Based on these data patterns, it may be that female cadets will not endorse military values as strongly as males. We will examine this issue in the following section.

#### Military Socialization and Cadet Performance

Since the focus of this chapter is what happens to cadets during Academy training, we are particularly interested in their acquisition of attitudes and orientations toward the military as an organization and career vehicle. In addition, we will explore relationships between these endorsements and other variables such as attitudes toward changing roles for women and perceptions of masculinity and femininity. Since traditional emphases in military training are regarded as masculine, we expect those who are oriented toward masculine traits to indicate more allegiance to military values and adjust better to military training. To gain a perspective on cadet adjustments to the Academy, we will examine performance levels as indicated by grade point and military proficiency averages and probe how these performance indicators relate to

other social psychological measures. A variety of statistical techniques will be used in the analysis of data, including tests of significance and correlational measures. These will be described in more detail as results are presented.

As discussed in the prior section, the measure of the military subculture consists of two factors, or subscales, developed for this research. The first one is labeled Core Military Values and contains 10 items concerning the importance of honor, loyalty, duty, chain of command, fighting spirit, and professionalism for military organizations and their members. The other one contains five items focusing primarily on Military Rank and Bearing Issues including statements regarding the importance of deference toward higher ranks, privileges associated with rank and the necessity for dress and general appearance regulations. Table 3 contains mean scores for males and females during both their first and last years at the Academy, and they show that most cadets only mildly agree or disagree with most items since means do not range much beyond +1 and -1. At both points in time, female cadets are more positive than males concerning military orientations (although these did not reach .05 level of significance on separate t-tests).

To assess the significance of changes in these scores over time we will again use Hotelling's  $T^2$  statistic which tests changes in multiple measures simultaneously. Such a test is appropriate since the two subscales are intercorrelated ( $r = .58$   $p = .000$ ).  $T^2$  is a multivariate application of the t-test applied to analyses of repeated measures of samples and we use it to test for differences over time in male as well as female scores. Results indicate that while female scores change over the three year period ( $T^2 = 6.86$   $p = .05$ ), there is more change in male scores ( $T^2 = 10.31$   $p = .01$ ). In examining individual t-tests for each subscale we find significance is due in

large part to increases in endorsements of rank and bearing issues. Another analysis using  $T^2$  is applied to comparisons of differences between male and female scores at both points in time to see whether male and female agreement with military values change the same or different amounts relative to each other. This analysis of male-female differences at two points in time reveals that differences remain the same ( $T^2$  1.67  $p$  = NS). What we find then is that while female cadets endorse military values somewhat more strongly than males, both sexes do in fact become more positive in their military orientations the longer they remain at the Academy.

To understand if and how learning military values is related to other cadet characteristics, a correlation matrix was computed using both subscales of the military subculture measure and other social psychological scales. Table 4 reports correlations of values for three different types of measures. Cadet conceptions of the r masculinity and femininity are included as well as three scales of attitudes toward changing roles for women and two evaluations of organizational role ambiguity and conflict. Correlations were also calculated between measures of aspiration, achievement, perceptions of environment control and military subculture scales but are not included in Table 4 because none are significant. Turning to results reported on Table 4 we see that the subscale of military rank and bearing issues is basically unrelated to other characteristics of cadets while this is not the case for the military core values scale. Also, there are different significant correlations for males and females. However, it is important to remind the reader that while there are a number of correlations listed as significant, such significance is affected by the sample size and these are fairly large samples. Thus, we will also consider the proportion of explained variance obtained from the correlations, and it is only with correlation values between



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point in their training, many also seriously considered marriage commitments with their peers but by graduation time many backed off from these and were less certain of their future.

Given these contradictory and somewhat ambiguous conditions, it would not be surprising to find these young women banding together to challenge some aspects of the Academy system but this was not the case. In fact, over the four year period they increasingly interacted with males at the expense of female interaction and expressed very little identification with the few female officers at the Academy. Their solution appears to be that of opting out after fulfilling obligations. As we saw in the prior chapter, very few female cadets expect long-term military careers. Leaving the military not only will provide solutions to conflicting attitudes and beliefs but will allow them to more readily accommodate the career-marriage-family goals which a large number of these young women prefer. Such a solution will deprive the military of needed talent and even more so if large numbers of somewhat less talented males choose to remain in the service. This may be the result of a highly sex-differentiated organization perpetuating its values and orientations through professional socialization.

not only significantly impacts their military orientations but also the extent of control males perceive they exercise over their environment. They embrace military values, strongly identify with male military officers as role models and perhaps most important become significantly more "masculine". That is, at the end of training these young men say they are more aggressive, competitive, competent, etc., than when they entered the Academy. They also retain most of their strong feelings concerning the military as basically a man's organization, engaged in primarily masculine tasks which women are neither biologically nor psychologically equipped to handle. There is indirect evidence that male cadets are rewarded for their socialization in that the more they indicate they possess masculine attributes, the higher military proficiency ratings they receive; and even if they aren't very successful in their military performance, most still expect to have long-term military careers.

The impact of military socialization is somewhat different for young women. While it is clear they also adapt to the environment and endorse military values, they continue to believe they have considerable control over their environment. At the same time, these young women find it more difficult than male cadets to sort out organizational expectations and express higher levels of role ambiguity.

Young women also appear to "play the game" at the Academy--they endorse military orientations and actively participate in various activities. However, they continue to retain a number of very strong attitudes and beliefs which are somewhat deviant in this setting. While female cadets say they are more tender, yielding, and sympathetic after they have been at the Academy for four years, they also strongly endorse changing military roles for women including combat participation. At one

great deal of anticipatory socialization with little change in cadet orientations during four years of training (Lovell, 1976).

It should be pointed out, however, that males and females who attend services academies differ significantly in a number of characteristics. For example, they express very different attitudes and beliefs toward changing roles for women in society generally and in the military. Females are significantly less traditional than males and strongly committed to their views. Somewhat related to this we also find female cadets are much more receptive to a wider range of lifestyles than males. These young women are ambitious, committed to careers but still interested in some marriage and family experiences. This means they are much more willing than male cadets to consider various options in relationships with the opposite sex, living arrangements, and family designs.

Given this mixture of similarities and differences it is not surprising that males and females change in both similar and different ways as they undergo military socialization. As we found, it is also clear that male and female cadets, have a number of different experiences at the Academy. For example, males still heavily dominate leadership in the central areas of military activities, athletics and academics while many more young women are heavily involved in the rather separate areas of female intercollegiate sports and extracurricular clubs and organizations. Thus, as a result of distinctive cadet characteristics and experiences, research findings discussed in the prior sections revealed the parameters of military socialization in this setting.

Both males and females more strongly endorse central military values after spending four years at the Academy, but male cadets change more in their endorsements of these values than females. The Academy environment

explored this possibility again by cross-classifying cadet scores on the Attitudes Toward Women Scale and their degree of internal-external control. Table 14 shows the trend for male cadets--more externally oriented cadets are significantly less enthusiastic regarding changing roles for women. We also completed another analysis to examine how cadets change in attitudes toward women depending on their degree of internality-externality. In this analysis of variance, change scores were calculated for attitude scores and analyzed with sex of cadet and Rotter scale. The main effect for internal-external control was significant ( $F = 7.21$   $p = .009$ ) and mean change scores of attitudes indicate that the more external group becomes less favorable toward changing roles for women. This was particularly true for males and indicates yet another change they undergo during military socialization.

#### Summary and Implications

When cadets arrive at the Academy they are a relatively homogeneous group and males and females are alike in many ways. Both are very competent, hard-driving, ambitious and feel they are more in control of their environment and what happens to them than do comparable college youth. Not surprisingly, both male and female cadets also describe themselves more readily with typical masculine attributes compared to similar civilians. Also, a large number have had some prior exposure to military orientations through family histories of military service. Even though we did not query cadets concerning endorsements of military values upon their arrival, these undoubtedly would have been fairly strong. We have evidence from studies of West Point cadets revealing a

We examined some of these interrelationships using correlations between masculinity and femininity and other scales. Table 12 reports these results. We see some significant correlations between the Occupational Aspirations Scale as well as the Achievement Motivation Scale and femininity scores of both males and females. Cadets who say they are less feminine indicate they have higher occupational and achievement orientations which is consistent with other research findings in a negative sense. Other studies find significant positive correlations between masculinity and achievement motivation measures which is not the case here.

We also see in the table two different types of results in correlations of masculinity and the Rotter scale. As males become more external they indicate more masculinity and the reverse is true for females. As we shall see in subsequent data tables, male cadets generally also become more external during their Academy training which in turn is related to their changing attitudes toward women. So there appears to be an interrelated set of changes for male cadets--more masculine, more externally oriented and more traditional regarding women's roles.

Table 13 contains scores on the Rotter Internal-External Scale for a somewhat similar number of the sample who have scores available at two points in time. Not all cadets in the Class of 1980 completed the same battery of tests when they entered the Academy so there are only about one-half of the sample with first year scores on this measure. This sample of male cadets has become significantly more externally oriented after four years of Academy training which is not true for females. Thus, these young men become more willing to attribute life events to forces beyond their control and if Rotter's theory is correct they also are more amenable to attitude and value changes (which was true for military values). We

significantly more masculine ( $t = 2.08$   $p = .04$ ) and females more feminine ( $t = 2.04$   $p = .05$ ). They also decline slightly in their conceptions of femininity (males) and masculinity (females). We see this more clearly in the changes in overall classifications on Table 11. Many fewer males, as well as females, indicate balance combinations of masculine-feminine traits and by the last year of training fewer are in the undifferentiated and androgynous classifications (chi-squares for both males and females are significant).

These changes are somewhat unanticipated since research at West Point indicates that after a short period of military training, both males and females become somewhat more masculine with declines in self attributions of feminine traits. However, as Major Adams (1979) points out, most of this research is cross-sectional and West Point has not followed up with the same instruments, on the same sample, after a period of several years. Thus, the comparability of such changes in other military training settings needs to be explored.

Implications of such changes in self concepts are far from clear since research findings are mixed in terms of the correlates and consequences of more or less sex-typed individuals. For example, such experimental studies have shown that in certain situations more narrowly sex-typed individuals are not as comfortable as others in carrying out cross-sex behavior such as child care or mechanical tasks (Bem, 1976). Surveys of high school and college youth reveal more masculine individuals are more active in group activities in schools and communities (Spence and Helmreich, 1978). These surveys also find some relationships between dimensions of masculinity-femininity and other personality characteristics such as achievement motivation.



female. Using the Bem Sex-Role Inventory we measured cadet self concepts at two points in time and Table 8 contains scores during their first year at the Academy as well as comparable scores from college students at Auburn and Stanford Universities. Both male and female cadets are significantly more masculine than college counterparts, but they are similar to college youth in self ascriptions of femininity. Given academy recruitment emphases on well-rounded, athletic leaders and the demanding academic, military and athletic programs in this setting it is not surprising that young people who choose to attend the Academy describe themselves more in terms of aggressive, competitive, and dominant. Similar results are found at West Point where both male and female cadets have high self attributions of masculinity as well as high self esteem.

Another way of examining the Bem scales is in terms of their total configuration which results in a four-fold classification of overall personality attributes. Table 9 lists proportions of cadets and Stanford college students who are classified as either predominantly feminine, undifferentiated, androgynous or masculine. Examining the information in this way reveals no significant differences between college students and cadets and we see that most males think of themselves as predominantly masculine and females as primarily feminine although in both samples there is approximately one-quarter who describe themselves as having a strong mixture of both types of traits and thus are labeled androgynous.

What happens to cadet conceptions after they undergo military training stressing essentially masculine traits? Tables 10 and 11 contain scores on the Bem masculinity and femininity scales for both the first and last years at the Academy. Similar trends are evident in both tables. During this period cadets become more narrowly sex-typed; that is males become

assess another dimension of future aspirations, cadets were asked to complete the Ghiselli achievement motivation scale. Scores on this scale are reported as well as relationships between occupational aspirations, achievement motivation and other social psychological characteristics. Table 6 contains scores from the aspirations and achievement scales. In general, we find all cadets score fairly high on these dimensions and there is little difference between males and females (in fact, female scores are slightly higher on both). Also, all cadets scores high on these scales compared to other civilian groups such as students, workers and supervisors. Cadets want to achieve and particularly in higher prestige occupations. Similar results are available from West Point where they found both male and female cadets high in achievement motivations (Adams, 1979).

Cadets also completed Rotter's measure of perception of control of environment which is known as the Locus of Control Scale. Given past research with this scale and its positive relationship to other variables such as achievement and competence, it was hypothesized that youth who voluntarily choose to participate in a highly-structured competitive environment like the Academy probably would feel strongly they are in control and thus internally directed. Table 7 lists scores in Rotter's scale for both Air Force and civilian youth. As expected, both male and female cadets are significantly more internally directed than Auburn University students. In addition, we find no difference between the sexes in either setting. Again, these data are comparable to information from West Point.

As we indicated, a central component of self-concept is an individual's ascription of various traits associated with being male or

averages but not academic averages. Results for male cadets indicate those who expect to be general officers are largely in middle levels of grade point and military averages, but this is not true for the large proportion of young men who expect to attain ranks of major or colonel. It is interesting that in both grade point and military averages, a high proportion expecting to be major or colonel are in both lower as well as higher levels. Thus, even male cadets who haven't performed very well at the Academy are quite confident they will be able to have a career in the Air Force--which is probably true.

#### Changes in Cadet Self Concepts and Attitudes

In other sections of this report there have been some discussions of attitudes and orientations of cadets and how they changed; however, there are several important dimensions which have not yet been reported. First, however, we will review several findings reported earlier.

It will be recalled that male and female cadets differ considerably in their attitudes toward changing roles for women--both in society and in the military. Male cadets are much more traditional in their orientations than female cadets and other young men and women. Essentially this does not change over the period of Academy training. In the present context we will examine relationships between changes in these attitudes and other cadet characteristics.

In the prior chapter, occupational aspirations of cadets were discussed in terms of their relationship to career and lifestyle plans and we found considerable differences between male and female cadets. While young women indicated generally high levels of aspirations, they definitely were not planning to remain in the Air Force as long as males. In order to

traits in military organizations. Males who say they are particularly aggressive, competitive, dominant, and the like are undoubtedly more likely to be highly evaluated by supervising officers and their peers who are males. However, this raises a number of issues concerning the nature of military evaluations. For males it is very clear what is valued and expected in military settings, but this is less so for females. While females are expected to perform in basically male oriented activities, they are cautioned not to lose "their femininity" but as we see in these correlations, this means young women generally will not be as highly evaluated in military assessments. Data from the Academy indicate similar average military scores for male and female cadets but we find female evaluations are more concentrated in middle levels while male scores are in bottom and top levels. To explore further relationships between performance and organizational commitment, MPA and GPA values were cross-classified with cadet expectations regarding likely future rank attainments.

Cadet responses to what rank level they expected to attain in the Air Force were classified into three levels--general officer, major through colonel and lieutenant through captain. Similarly, grade point and military averages were divided into three levels--low, middle and high--and then cross-classified with rank expectations. The findings are similar for both grade point and military averages but differ for males and females. In summary, for young women, at all levels of rank expectations, we find approximately one-third are in each level of grade point or military averages. For example, of the young women who expect to be majors or colonels 32% are in the lowest GPA-MPA levels, 31% in the middle and 36% in the highest. There is one exception and this is in terms of the small numbers of women who expect to be general officers and we find 45% of these are in the highest level of military

Cadets who subscribe more strongly to key military values may also perform better in academic and military activities. Studies of occupational socialization have found as recruits increasingly support organizational values, their performance and commitment to the group increases (Patton, 1968). To explore relationships between recent performance levels of cadets and endorsements of military values as well as other social psychological characteristics, a correlation matrix was computed. Significant results are reported in Table 5. However, there are three types of measures where no indications of interrelationships emerge. These are measures of aspiration and achievement, the several measures of attitudes toward women's roles and assessments of role ambiguity and conflict. Examining results reported in Table 5 we see that it is not possible to predict much about grade point levels from any variables and only several appear to be useful in predicting levels of military proficiency. Again, while some correlations are significant at .05 or higher, only several account for much of the explained variance in military proficiency. For example, the correlation for military values and MPA for males is .19 which is significant at .05 but only accounts for about 4% of the explained variance. The two most interesting findings are negative correlations for females between Rotter's scale and performance levels and the positive correlations for males of masculinity and military values with military performance. The findings indicate that as female cadets become more internal (as indicated by the Rotter scale), they attain higher MPA's and GPA's. These are significant correlations and each account for about 8% of the variance. The other finding to note is that males indicating more masculine traits also perform better in military activities.

The relationship between military performance levels and masculinity (particularly among males) is not very surprising given the emphasis on such

.23 and .36 that 10 to 15% of the variance is explained. Two social psychological scales--attitudes toward changing female roles and role ambiguity--are significant and make fairly large contributions to the explained variance.

There are similarities as well as differences in correlations of male and female cadets. For example, both sexes have rather high negative correlations between role ambiguity and military values indicating that the more strongly cadets endorse military values, the less role ambiguity they perceive. This is not surprising since it is likely that the more individuals subscribe to organizational viewpoint; role expectations become clearer. In contrast, the several correlations for attitudes toward changing women's roles reveal sex differences. For male cadets, the more strongly they endorse military values, the less enthusiastic they are concerning changing women's roles which is consistent with learning traditional military orientations. This is not true for female cadets, and we find very low correlations for two attitude scales and one other is moderately positive, indicating the more favorable female cadets are on military values, the more favorable their attitudes toward women. It will be recalled that in general these young women are very supportive of changing women's roles, and again this is clear in these data. The two Bem scores of masculinity and femininity are not highly correlated with levels of military values except for a rather low positive correlation between male cadet perception of masculinity and military values. What we find, then, is evidence of military socialization as a result of academy experiences and as cadets become more socialized males also solidify some of their traditional attitudes toward women which was evident in analyses of changing beliefs and attitudes in Chapter Two.

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TABLE 1

## CADET REPORTS OF INVOLVEMENT IN ACTIVITIES

<u>Activity</u>	<u>Comparison of Male and Female Involvement</u>
Regular Academic	F report more occasional leadership; M high leadership
Special Academic	Significant M-F differences ( $p = .04$ ); F more occasional M high leadership
Intramural Athletics	Significant M-F differences ( $p = .00$ ); F minimal involvement M heavy
Intercollegiate Athletics	Significant M-F differences ( $p = .00$ ); M minimal involvement F heavy and leaders
Special Military Training	Significant M-F differences ( $p = .02$ ); M more involved and leaders
Summer Military Pa	F more occasional leadership; M high leadership
Cadet Military Administration	F more occasional leadership; M high leadership
Cadet Councils	About equal involvement at all levels
Extra-Curricular	Significant M-F differences ( $p = .00$ ); M minimal involvement F heavy and leaders



TABLE 2  
CADET SCORES ON ROLE AMBIGUITY AND CONFLICT SCALES

<u>Scale</u>	<u>Year 2</u>			
	<u>Male</u> <u><math>\bar{X}</math></u>	<u>Female</u> <u><math>\bar{X}</math></u>	<u>t</u> <u>Value</u>	<u>p</u> <u>(2-tailed)</u>
Role Ambiguity	2.80*	3.18	2.01	.04
Role Conflict	4.20*	4.28	.43	.67

Males = 87  
Females = 81

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\* Scores range from 1 to 7.

TABLE 3  
MILITARY VALUES SCALE

<u>Component</u>	Year 1		Year 4	
	Males <u><math>\bar{X}</math> Scores*</u>	Females	Males <u><math>\bar{X}</math> Scores</u>	Females
Endorsement of Core Military Values	-.55	.61	-.22	.74
Endorsement of Military Rank and Bearing Issues	-.11	.24	.31	.59

Males - 86  
Females = 80

---

\* Scores range from -2 to +2 with positive values indicating greater endorsement.

TABLE 4

CORRELATIONS BETWEEN MILITARY VALUES SCALES  
AND SOCIAL PSYCHOLOGICAL MEASURES

Other Measures	Core Military Values		Rank and Bearing Issues	
	M	F	M	F
Masculinity	.17	.12	NS	NS
Femininity	NS	NS	NS	NS
Attitudes Toward Women	-.31**	.09	NS	NS
Women at Academy	-.14*	.26**	NS	NS
Women in Military	-.07	.06	NS	NS
Role Ambiguity	-.36**	-.23**	-.13*	.10
Role Conflict	NS	NS	NS	NS

Males = 90  
Females = 84

---

\* p .05  
\*\* p .001

TABLE 5

CORRELATIONS BETWEEN CADET PERFORMANCE  
AND SOCIAL PSYCHOLOGICAL MEASURES

Other Measures	MPA		MPA	
	Male	Female	Male	Female
Masculinity	.34	.16	NS	NS
Femininity	NS	NS	NS	NS
Military Values	.19*	.10	NS	NS
Rank and Bearing	NS	NS	NS	NS
Rotter IE	.19*	-.24**	.03	-.23**

Males = 90

Females = 84

\* p .05

\*\* p .001

TABLE 6  
CADET SCORES ON ACHIEVEMENT MOTIVATION  
AND OCCUPATIONAL ASPIRATION SCALES

<u>Scale</u>	Male <u><math>\bar{X}</math></u>	Female <u><math>\bar{X}</math></u>	t <u>Value</u>	p <u>(2-tailed)</u>
Achievement Motivation	35.7*	37.2	.42	.67
Occupational Aspiration	53.6**	56.1	2.25	.02

Males = 89  
Females = 82

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\* Scores range from 20 to 60.  
\*\* Scores range from 8 to 72.

TABLE 7

COMPARISON OF CADET AND CIVILIAN SCORES ON  
ROTTER'S LOCUS OF CONTROL SCALE

<u>Sample</u>	<u><math>\bar{X}</math>'s**</u>	<u>N</u>	<u>t</u> <u>value</u>	<u>p</u> <u>(2-tailed)</u>
USAFA Males	8.73	89		
*Auburn University Males	10.55	130	3.95	.01
USAFA Females	8.41	82		
*Auburn University Females	10.80	81	3.87	.01

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\* Scores from Bedian and Hyder (1977).

\*\* Comparisons of male vs female scores not significant.

TABLE 8  
COMPARISON OF CADET AND CIVILIAN SCORES ON  
BEM MASCULINITY AND FEMINITY SCALES

<u>Scale and School</u>		<u>Civilian <math>\bar{X}</math>'s</u>	<u>Cadet <math>\bar{X}</math>'s (M=92,F=85)</u>	<u>t Value</u>	<u>p (2-tailed)</u>
<u>Masculinity Scale</u>					
*Auburn Males	(N=130)	5.16	5.57	4.15	.01
**Stanford Males	(N=400)	4.98	5.57	7.53	.01
Auburn Females	(N=81)	4.62	5.03	4.11	.01
Stanford Females	(N=270)	4.55	5.03	5.70	.01
<u>Femininity Scale</u>					
Auburn Males		4.58	4.58	NS	
Stanford Males		4.45	4.58	NS	
Auburn Females		5.15	5.09	NS	
Stanford Females		5.01	5.09	NS	

\* Scores from Bedian and Hyder, 1977.

\*\* Scores from Bem, 1975.

TABLE 9

COMPARISON OF CADET AND CIVILIAN CLASSIFICATIONS ON  
BEM SEX ROLE INVENTORY

<u>Sex Role</u>	<u>*Stanford</u>	<u>USAFA</u>	<u>Stanford</u>	<u>USAFA</u>
	<u>Males</u>	<u>Males</u>	<u>Females</u>	<u>Females</u>
	<u>%</u>	<u>%</u>	<u>%</u>	<u>%</u>
	<u>(N=375)</u>	<u>(N=92)</u>	<u>(N=290)</u>	<u>(N=85)</u>
Feminine	16	13	34	42
Undifferentiated	27	25	20	20
Androgynous	21	28	29	24
Masculine	37	34	16	14

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\* Classifications from Bem, 1977.



TABLE 10

## CHANGES IN CADET MASCULINITY AND FEMININITY SCORES OVER TIME

<u>Scale</u>		<u>Year 1</u> <u><math>\bar{X}</math>'s</u>	<u>Year 4</u> <u><math>\bar{X}</math>'s</u>	<u>t</u> <u>Value</u>	<u>p</u> <u>(2-tailed)</u>
Masculinity					
Males	(N=91)	5.41	5.57	2.08	.04
Females	(N=85)	5.07	5.02	.39	.69
Femininity					
Males		4.58	4.53	1.12	.27
Females		4.87	5.09	2.04	.05

TABLE 11

## CHANGES IN CADET SEX-ROLE CLASSIFICATIONS OVER TIME

<u>Sex Role</u>	Males		Females	
	Year 1 %	Year 4	Year 1 %	Year 4
Feminine	13	11	42	50
Undifferentiated	25	23	20	15
Androgynous	28	18	24	21
Masculine	34	48	14	14
	$\chi^2 = 27.2 \text{ p } .001$		$\chi^2 = 31.4 \text{ p } .000$	

Males = 92  
Females = 85

TABLE 12  
CORRELATIONS BETWEEN MASCULINITY-FEMININITY  
AND SOCIAL PSYCHOLOGICAL MEASURES

<u>Other Measures</u>	<u>Masculinity</u>		<u>Femininity</u>	
	<u>M</u>	<u>F</u>	<u>M</u>	<u>F</u>
Occupational Aspirations	NS	NS	-.19*	-.23*
Achievement Motivation	NS	NS	-.39**	-.23*
Rotter I-E	.25*	-.23*	NS	NS
Role Ambiguity	-.47**	NS	NS	NS
Role Conflict	NS	NS	NS	NS

Males = 90  
Females = 84

---

\* p .05  
\*\* p .001

TABLE 13

## CHANGES IN CADET LOCUS OF CONTROL SCORES OVER TIME

<u>Sex</u>	<u>Year 1</u> <u><math>\bar{X}</math></u>	<u>Year 4</u> <u><math>\bar{X}</math></u>	<u>t</u> <u>Value</u>	<u>p</u> <u>(2-tailed)</u>
Female Cadets (N=38)	7.39	8.12	.84	.41
Male Cadets (N=37)	7.49	9.59	2.22	.03

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fifties, life at the Academy was not as distinctive as it is during the eighties. In fact, a common theme in comments of former cadets was that they felt dissatisfied with the "unreal", "stagnant" environment of the institution. The following are illustrative comments from both males and females:

"The Academy did not represent a creative atmosphere--it was both limiting and stagnant. I particularly could not take the "uppity, I'm better than you" trips that most cadets and officers were in to."

"I felt that my world crashed when I entered the Academy. I was young and somewhat idealistic but the environment was unbearable and out of tune with society. I realized that the people at the Academy lived in an unreal world and that the prestige given to them was often unwarranted."

"I felt overly restricted at the Academy and that many of the goals of becoming an officer could be met in other ways. Particularly I feel that "doolie" year could be accomplished in about six months so that the fourth class could assume greater responsibility and interaction with others earlier."

While there always will be a certain number of young people who don't feel their best interests are served by service academy programs, this does not mean the Academy can afford to remain insensitive to the perceptions and desires of potential members. The military generally is becoming less discontinuous from society which also means that is is very likely utilization of women will increase, not decrease, and the Air Force Academy will be called upon to train more not fewer young women. The issues and problems we have highlighted will not simply disappear with the passage of time; they must be confronted. Also, accurate research information is needed to continue to monitor changes taking place at the Academy. The class of 1980 to a certain extent was special but the information they provided will form a foundation for future studies. West Point is continuing its systematic research effort on the adaptation of male and female cadets--the Air Force Academy also must move in this direction.

tasks in basic training or some of the athletic competitions really central to the primary goals of the Academy? Obviously, sex differences in performance cannot be eradicated but it should be recognized that as males observe and "learn" that young women do not perform well in some areas, there is an immediate decline in favorable orientations toward women (DeFleur et al., 1978).

Fourth, there should be a non-concerted effort to change the sex ratio at the Academy. This is tied to broader Air Force policies but any improvement in the current small numbers of women would be a step in the right direction. The role of "token" which women currently occupy is a difficult, no-win situation and clearly some survey responses were directly related to the skewed sex ratio and small total numbers of women at the Academy.

Fifth, there should be some effort to recruit a wider range of people to the Academy. As the data indicate, young men who attend the Academy are more distinct from their peers, in terms of attitudes and orientations, than we find in many comparisons of female cadets and college youth. Related to this is the fact that young women who are oriented toward technical and scientific occupations are currently in much more demand than comparable young men and thus have more options. There are clear indications, however, that in future generations of women, there will be increasing numbers who have both interests as well as necessary backgrounds in such fields. Thus, as alternative options for women become less available, they may be more willing to attend and complete Academy training.

Sixth, the entire Academy milieu should be examined in terms of its relationship to other educational and training environments. In the

programs is essentially cosmetic. At the same time, basic changes in organizational emphases and characteristics of participants are difficult to initiate even if consensus is reached regarding their desirability. However, some steps can be taken and a number of these will be discussed below.

First, women can be actively encouraged to form groups which can provide mutual support as well as communication opportunities. It is often difficult for them to discuss problems and issues at the Academy in a one to one situation and several young women indicated in conversations that they felt stymied in their individual efforts to combat a variety of interpersonal as well as programmatic difficulties.

Second, it is clear to everyone at the Academy that the power is in the hands of males and the current positions of females confirm this. There was an abortive attempt to bring female officers to the Academy as ATO's but this turned out to be an untenable role and both male and female cadets rejected them. There are a few female faculty members and some female cadets report they have established relationships with them. However, it is clear that female AOC's have not been as well accepted by either sex. Other occasional female officers at the Academy have not held any significant positions. Thus one step would be to recruit a high-ranking female officer as commandant of cadets or superintendent. While this would send a clear signal to the Academy concerning the role and respect for female officers it obviously would not represent a basic change in the organization.

Third, both specific components as well as the general character of Academy programs should be examined. This should begin with an examination of areas where differences between the sexes are intensified. Are certain



In her study of female naval officers, Thomas asserts that this role is particularly fraught with ambiguities and conflicts since female officers are neither a valued nor needed resource. Female officers who responded to a questionnaire said that negative male attitudes and beliefs adversely affect their Navy careers and thus they become disillusioned and leave the Navy. These somewhat older midlevel female officers are overwhelmingly in favor of changing military roles for women and the removal of remaining combat restrictions. They view these changes as essential for assuring equal opportunities and competition with male officers. On all fronts strong disapproval of such change is expressed by male officers.

We find, then, in these situations strong persistent sex differences in orientations which are expressed in daily interaction. Rather quickly, a substantial proportion of women in military organizations become both hostile as well as disillusioned. Many simply leave for more gratifying work and careers--which is a common adaptation among female cadets at the Air Force Academy.

### The Future

What lies ahead for the Air Force Academy? At least in the immediate future, sex integration is likely to continue its present course in which the bottom line is considerable dissatisfaction and disillusionment for female cadets which is expressed in high attrition and few long-term commitments to the Air Force. This is not easily remedied since many of the causes are rooted in the basic nature of the organization and its culture. Thus, focusing on issues such as role models and human relations

Academy. For example, both males and females indicate they became more masculine as a result of their training and have stayed the same or decreased slightly in their attributions of femininity. Informal interviews with female cadets at West Point reveal some of these young women have become "harder" and "less understanding" during their training and assert themselves more--particularly in response to sexist behaviors at the Academy. In any case, changes in self concept at West Point are not as great as at the Air Force Academy and there are clear differences in reports of female cadets at the two academies. Since female Air Force cadets say they have become more feminine during their four years, it may be that these changes do not help them to deal forcefully with many sexist situations. In general, however, they appear to be more disillusioned than some of their West Point peers but at both academies they agree there is substantial room for improvement in relationships between the sexes.

Other studies of women in military settings have reported on problems of female naval officers (Thomas, 1978) as well as enlisted women in the Army Signal Corps (Rustad, 1980). The general problems are the same as discussed throughout this report only expressed somewhat differently in these settings. Rustad's investigation stresses strained interrelationships and sex-role behaviors in the Signal Corps. Many male supervisors have strong negative attitudes toward women in these traditionally male specialties and often make unwarranted assumptions regarding capabilities of women. Paternalism as well as harrassment exist and frequently young women attempt to counter their unfavorable treatment directly. However, they also play role games using traditional female techniques and some form liasons with their male supervisors. Most eventually resolve conflicts by leaving the military.

Interdependency was not created. Women doolies had no rewards to give in return for acceptance, and they had few allies or sponsors. No one could quite imagine them "grown up". Instead, the women seemed to be judged for what they were or had been, while the men seemed to be valued for their "promise", for what they would be. It was understood that they had much to do and to learn before they were complete. It was almost as though the double standard of aging led young women to deny rather than to plan for their middle years, and led men to chivalrously think of them as they presently were, rather than as what they would become.

By June, 1977, men understood that they had come a long way. Women realized there was still a long way yet to go." (Stiehm, 1980:forthcoming)."

This information, coupled with data from the survey, indicates little change in the assimilation of women at the Academy during the last four years. This does not appear to be an unique situation since similar issues and problems emerge in studies of other military organizations. For example, West Point has gathered a large volume of information during the last four years even though they have not followed a specific class or sample of cadets. In a recent paper reviewing prior research on women, Robert Priest and others from West Point summarize their findings and conclude that after four years there is a mixture of positive and negative trends. They observe a number of differences between the sexes and report that male cadets have more commitments to long-term military careers and are more positive in their loyalty to and satisfaction with West Point. Male cadets perceive more acceptance both as cadets and as individuals compared to females. These findings are similar to those from the Air Force Academy. Female cadets at West Point also report an increase in differential treatment based upon sex, race, or ethnic characteristics and this is attributed to the increased unwillingness of females to tolerate such behaviors. It is also interesting that changes in cadet conceptions of masculinity and femininity at West Point are different than at the Air

While male cadets are aware of this situation, they obviously do not feel as strongly as the young women. The two comments below are illustrative of what some males said about integration:

"The treatment of female cadets varied from complete indifference to tolerance to out and out hostility. It was a extreme rarity to find any cadet/officer who was sincerely interested in the female cadets' welfare."

"It seemed that the women cadets, although they had the same responsibilities as male cadets, were not looked upon as equals by the majority of cadets and officers. A schism existed between the sexes."

Data from other sources also provide evidence concerning many of these problems. Throughout the initial year of sex-integration, Professor Judith Stiehm collected information from all divisions of the Academy and interviewed people at all levels--from cadets to generals. Her goal was to provide a chronology of the planning and initial integration of women. Her report is intended to be both a record of events as well as an interpretation of changes. She documents the planning and implementation of changes in preparation for sex integration in all three areas of the Academy (athletics, military, academic) and then assess the results at the end of the first year. The following passage summarizes her interpretation of these events:

"The bottom line seems to be that for the Air Force Academy 'success' lay in maintaining rather than in changing. In a required Behavioral Science course, cadets were taught that change (whether by Chinese Communists, Roman Catholic sisters, or U.S. fraternity men) can come about by 1) unfreezing, 2) identification/internalization and 3) refreezing. However, the Academy's change policies seemed to rely only on contact as a change strategy. Accordingly, during the first year any less than optimum results were attributed to either a) the need to let the four-year cycle run its course so no one with memories of other years would be around, or b) women's separate billeting. Some were concerned about male/female competition for the same positions, but for the most part, role and number restrictions for women were assumed rather than questioned, and for the most part, a male cadet enhanced peer- (and maybe) self-esteem by opposing women instead of by aligning with them.

Females don't feel as accepted as their male classmates and are aware of male negative attitudes and beliefs. Over time, their commitments to the Air Force decline and they are not as satisfied as males with first assignments and the Air Force in general. They also anticipate problems in realizing their career and family goals and this is probably why many of them become less certain during their training about when and how they will try to implement personal plans. Even with these ambiguities and conflicts, female cadets express confidence in their own abilities and are oriented toward achievement.

Both males and females state that there have been improvements in their interactions at the Academy and that there is less overt hostility between them. Nevertheless, very little change in attitudes and beliefs has taken place and the general situation remains much the same as before. Aggregate data over time have provided indicators of these trends and it is interesting that similar themes emerge in spontaneous comments from former cadets who were in the sample and responded to a brief mail questionnaire.

For example, some comments of former female cadets reveal feelings of lack of acceptance and loss of motivation:

"I originally had gone to the academy to become a pilot but I lost the excitement and determination to constantly fight against many of my 'male' counterparts. I was aware that there would be many negative attitudes from the men at the Academy but it made me realize that although society is changing the Academy wasn't and I wasn't willing to put up with not being accepted and respected."

Another young woman wrote that:

"It didn't matter whether Congress said women were to be accepted at the USAFA or not; it didn't matter whether some cadets and officers approved of the idea--there were always some who didn't and made it very clear. Some male cadets were always there to yell at you just when the feeling of belonging started sinking in. With the officers it was the same only in more subtle ways. I knew some instructors who hated us being there and I was terrified to go into their classes. I felt I was fighting a losing battle."

attitudes and beliefs and thus males have strong feelings of solidarity with their squadrons and say they are very accepted. In turn, we find variations in male attitudes and beliefs expressed in their levels of interaction with the opposite sex. Over time, male-female interactions have increased but much more so for young men who express positive attitudes toward women.

Male cadets try hard to fit into the Academy and more enthusiastically endorse central military values the longer they are in the program. They also think of themselves as more masculine after four years of training. During this time, male cadets develop strong feelings of identification with military officers (particularly male faculty members) and their commitments to the Air Force remain high. They are generally satisfied with their first career assignments and the Air Force. The careers ahead appear positive both in terms of chosen fields as well as likely rank attainments. Most males are not concerned that marriage and family goals will interfere with their progress since they intend to follow more traditional lifestyles with only one job or career in their families. The future appears bright for most of these young men.

Female cadets also are affected by their Academy experiences and are increasingly socialized regarding military orientations and values. After four years they are much more positive concerning the importance of loyalty, honor, and professionalism. At the same time, they think of themselves as more feminine which is one of the messages they have received throughout this period. More ambiguity is expressed by female cadets than males since while they say they have become more tender, compliant and the like, they also express high ambitions, and strong career goals while recognizing likely problems concerning their future in the military.

and supervisory roles--in large part because they believe women are affected by factors such as menstruation and a lack of emotional stability and assertiveness. Male-female differences are also expressed in views regarding marriage and family. Male cadets more strongly endorse traditional lifestyles and indicate very little willingness to make accommodations for spouses with outside interests and activities. Males have strong commitments to marriage and children but don't expect these to impinge on their own careers. Some male orientations vary with their socio-economic backgrounds with those from higher levels subscribing to somewhat less traditional views. In all areas, female cadets differ significantly from male classmates, but similarly those from higher socio-economic backgrounds are even less traditional in most of their views.

We also find male and female cadets have somewhat different assessments of the military and its changing functions. For example, significantly more female cadets than males believe that management and personnel activities have increased in importance in the Air Force. Similarly, there are differences in opinions regarding the centrality of flying activities. More striking are differences in conceptions of appropriate military roles for each sex. Young women believe females are capable of both noncombat and combat leadership (if they are properly trained) and overwhelmingly favor the elimination of remaining restrictions of women's activities in these areas. Males strongly disagree with females on these issues.

Over time, sex-linked attitudes and orientations solidify and this is particularly significant for male cadets because they feel that they have social support for their views. They perceive other males share similar

studies of military sex-integration to place data from the current study in perspective.

In a number of ways, males and females attending the Air Force Academy are similar, and represent only a segment of youth--mainly white, middle America. They have been very active, good citizens in high school and are ambitious, assertive leaders. However, there are important differences in the types of young men versus young women likely to be attracted to a military institution. Goals and orientations of the military are synonymous with traditional male activities and attributes and male cadets strongly endorse these (conversely they reject femininity and androgenous orientations and traits). This, along with their predominantly working and lower middle class origins, means that they share certain types of attitudes, world views and expectations regarding the military.

In contrast, female cadets have somewhat different backgrounds. Their parents tend to be more highly educated and are employed in managerial and professional occupations. Also, we know young women interested in traditionally male occupations have different attitudes and orientations compared to other young women. In fact, we find female cadets are considerably more ambitious, independent and assertive than comparable college women. However, they share convictions about the importance of changing sex roles with college women and are similar to civilians in the endorsements of a variety of marriage, family and living arrangements.

Not unexpectedly, data from attitude scales completed by cadets indicate significant differences between the sexes. Males are significantly less enthusiastic than both college youth and female cadets concerning changing roles for women in society and in military roles. Similarly, male cadets don't believe women are equipped to enter management



## Accommodation not Assimilation

The general conclusions from this longitudinal survey are not surprising. After observing four years of integration and charting the progress with our survey we find females have been accommodated in this male oriented and dominated organization. A *modus operandi* is in effect which results in some women completing training and embarking on a variety of Air Force careers but they are in the organization not of it. Questionnaire data indicate that the majority of female cadets are cognizant of their status and adapt in several ways--some leave the Academy; others stay but limit their commitments; and some move ahead with great aspirations for their careers. Male officers and cadets also adjust and for most their worst fears have not been realized. In fact males find female cadets share similar goals as well as problems and thus turn out to be full-fledged competitors which is not easy to accept. However, male cadets find support among peers and officers for their doubts, apprehensions and hostilities concerning women in military roles and more general changes in sex roles. Thus, socialization of male cadets results in solidification of their sense of masculinity and attitudes toward women. In this final chapter we synthesize findings from prior chapters and discuss some implications for the future.

### Summary of Trends from Survey Information

A substantial amount of quantitative information along with some interpretation has been presented in each of the prior chapters. In this section we will compile an overview and discuss some findings from other

TABLE 14  
RELATIONSHIP OF ATTITUDES TOWARD WOMEN AND  
LEVELS OF INTERNAL VS EXTERNAL CONTROL

<u>Rotter I-E Quartiles</u>	<u>Spence Scores</u>	
	$\bar{X}$ 's	
	<u>Male Cadets (N=90)</u>	<u>Female Cadets (N=83)</u>
(Internal) 1	47	60
2	47	57
3	43	58
(External) 4	36	57

APPENDICES

APPENDICES  
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SPENCE ATTITUDES TOWARD WOMEN SCALE (short version)

The statements in questions 1-25 describe attitudes toward the role of women in society that different people have. There are no right or wrong answers, only opinions. You are asked to express your feeling about each statement by indicating whether you:

- A. agree strongly
- B. agree mildly
- C. disagree mildly
- D. disagree strongly

1. Swearing and obscenity are more repulsive in the speech of a woman than a man.
2. Women should take increasing responsibility for leadership in solving the intellectual and social problems of the day.
3. Both husband and wife should be allowed the same grounds for divorce.
4. Telling dirty jokes should be mostly a masculine prerogative.
5. Intoxication among women is worse than intoxication among men.
6. Under modern economic conditions with women being active outside the home, men should share in household tasks such as washing dishes and doing the laundry.
7. It is insulting to women to have the "obey" clause remain in the marriage service.
8. There should be a strict merit system in job appointment and promotion without regard to sex.
9. A woman should be as free as a man to propose marriage.
10. Women should worry less about their rights and more about becoming good wives and mothers.
11. Women earning as much as their dates should bear equally the expense when they go out together.
12. Women should assume their rightful place in business and all the professions along with men.
13. A woman should not expect to go to exactly the same place or to have quite the same freedom of action as a man.
14. Sons in a family should be given more encouragement to go to college than daughters.
15. It is ridiculous for a woman to run a locomotive and for a man to darn socks.

16. In general the father should have greater authority than the mother in the bringing up of children.
17. Women should be encouraged not to become sexually intimate with anyone before marriage, even their fiances.
18. The husband should not be favored by law over the wife in the disposal of family property or income.
19. Women should be concerned with their duties of childbearing and housetending, rather than with desires for professional and business careers.
20. The intellectual leadership of a community should be largely in the hands of men.
21. Economic and social freedom is worth far more to women than acceptance of the ideal of femininity which has been set up by men.
22. On the average, women should be regarded as less capable of contributing to economic production than are men.
23. There are many jobs in which men should be given preference over women in being hired or promoted.
24. Women should be given equal opportunity with men for apprenticeship in the various trades.
25. The modern girl is entitled to the same freedom from regulation and control that is given to the modern boy.

ATTITUDES TOWARD WOMEN AT THE AIR FORCE ACADEMY

1. How do you feel about the admission of women to the USAFA?
  - a. strongly positive
  - b. moderately positive
  - c. slightly positive
  - d. slightly negative
  - e. moderately negative
  - f. strongly negative
2. The effect of the admission of female cadets to the USAFA on my feeling of pride in being a part of the Academy may best be described as follows:
  - a. it is greatly enhanced
  - b. it is somewhat enhanced
  - c. it makes no difference to me
  - d. it is somewhat diminished
  - e. it is greatly diminished
3. In my judgment, the effect of the presence of female cadets on the overall discipline within the Cadet Wing:
  - a. definitely is positive and helpful
  - b. probably positive
  - c. makes no difference one way or the other
  - d. probably is negative
  - e. definitely is negative and detrimental
4. Male cadets will benefit from having female cadets at the Academy.
  - a. agree strongly
  - b. agree mildly
  - c. disagree mildly
  - d. disagree strongly

ATTITUDES TOWARD WOMEN IN MILITARY LEADERSHIP AND COMBAT ROLES

1. Congress should let women enter combat units.
  - a. agree strongly
  - b. agree mildly
  - c. disagree mildly
  - d. disagree strongly
2. Women would make just as good operational airmen as men if they were given the same training.
  - a. agree strongly
  - b. agree mildly
  - c. disagree mildly
  - d. disagree strongly
3. If women were assigned to combat units, the Air Force would:
  - a. become more effective
  - b. remain just as effective
  - c. become less effective
4. Consider the current laws against women in combat and the USAFA's traditional mission of training combat leaders. How should the Academy train women cadets?
  - a. train them as combat leaders
  - b. train them for leadership roles in noncombat situations
5. Would you feel as secure in combat with a female commander as you would with a male commander provided both have equal qualifications?
  - a. yes
  - b. no



# WOMEN AS MANAGERS SCALE

Please use the following code to answer the following questions:

- | <u>Strongly</u><br><u>Disagree</u>  | <u>Disagree</u> | <u>Slightly</u><br><u>Disagree</u> | <u>Neither</u><br><u>Agree nor</u><br><u>Disagree</u> | <u>Slightly</u><br><u>Agree</u> | <u>Agree</u> | <u>Strongly</u><br><u>Agree</u> |
|---|-----------------|------------------------------------|---|---------------------------------|--------------|---------------------------------|
| A   | B               | C                                  | D   | E                               | F            | G                               |
| 1.  |                 |                                    |   |                                 |              |                                 |
| It is less desirable for women than men to have a job that requires responsibility.   |                 |                                    |   |                                 |              |                                 |
| 2.  |                 |                                    |   |                                 |              |                                 |
| Women have the objectivity required to evaluate business situations properly.   |                 |                                    |   |                                 |              |                                 |
| 3.  |                 |                                    |   |                                 |              |                                 |
| Challenging work is more important to men than it is to women.  |                 |                                    |   |                                 |              |                                 |
| 4.  |                 |                                    |   |                                 |              |                                 |
| Men and women should be given equal opportunity for participation in management training programs.  |                 |                                    |   |                                 |              |                                 |
| 5.  |                 |                                    |   |                                 |              |                                 |
| Women have the capability to acquire the necessary skills to be successful managers.  |                 |                                    |   |                                 |              |                                 |
| 6.  |                 |                                    |   |                                 |              |                                 |
| On the average, women managers are less capable of contributing to an organization's overall goals than are men.  |                 |                                    |   |                                 |              |                                 |
| 7.  |                 |                                    |   |                                 |              |                                 |
| It is not acceptable for women to assume leadership roles as often as men.  |                 |                                    |   |                                 |              |                                 |
| 8.  |                 |                                    |   |                                 |              |                                 |
| The business community should someday accept women in key managerial positions.   |                 |                                    |   |                                 |              |                                 |
| 9.  |                 |                                    |   |                                 |              |                                 |
| Society should regard work by female managers as valuable as work by male managers.   |                 |                                    |   |                                 |              |                                 |
| 10.   |                 |                                    |   |                                 |              |                                 |
| It is acceptable for women to compete with men for top executive positions.   |                 |                                    |   |                                 |              |                                 |
| 11.   |                 |                                    |   |                                 |              |                                 |
| The possibility of pregnancy does not make women less desirable employees than men.   |                 |                                    |   |                                 |              |                                 |
| 12.   |                 |                                    |   |                                 |              |                                 |
| Women would no more allow their emotions to influence their managerial behavior than would men.   |                 |                                    |   |                                 |              |                                 |
| 13.   |                 |                                    |   |                                 |              |                                 |
| Problems associated with menstruation should not make women less desirable than men as employees.   |                 |                                    |   |                                 |              |                                 |
| 14.   |                 |                                    |   |                                 |              |                                 |
| To be a successful executive, a women does not have to sacrifice some of her femininity.  |                 |                                    |   |                                 |              |                                 |
| 15.   |                 |                                    |   |                                 |              |                                 |
| On the average, a woman who stays at home all the time with her children is a better mother than a woman who works outside the home at least half-time. |                 |                                    |   |                                 |              |                                 |

16. Women are less capable of learning mathematical and mechanical skills than are men.
17. Women are not ambitious enough to be successful in the business world.
18. Women cannot be assertive in business situations that demand it.
19. Women possess the self-confidence required of a good leader.
20. Women are not competitive enough to be successful in the business world.
21. Women cannot be aggressive in business situations that demand it.

## ROTTER INTERNAL VERSUS EXTERNAL CONTROL SCALE

The following questions are designed to find out the way in which certain important events in our society affect different people. Each item has two parts, a or b, and you are to select the one which represents what you believe to be the case as far as you are concerned. There are no right or wrong answers, only what you believe to be true for yourself.

1. a. Children get into trouble because their parents punish them too much.  
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.  
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.  
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.  
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he/she tries.
5. a. The idea that teachers are unfair to students is nonsense.  
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.  
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try some people just don't like you.  
b. People who can't get others to like them don't understand how to get along with others.
8. a. Heredity plays the major role in determining one's personality.  
b. It is one's experiences in life which determine what one is like.
9. a. I have often found that what is going to happen will happen.  
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.  
b. Many times exam questions tend to be so unreal to course work that studying is really useless.

11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.  
b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.  
b. This world is run by the few people in power, and there is not much the ordinary person can do about it.
13. a. When I make plans, I am almost certain that I can make them work.  
b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14. a. There are certain people who are just no good.  
b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.  
b. Many times we might just as well decide what to do by flipping a coin.
16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.  
b. Getting people to do the right things depends upon ability, luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.  
b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.  
b. There really is no such thing as "luck."
19. a. One should always be willing to admit mistakes.  
b. It is usually best to cover up one's mistakes.
20. a. It is hard to know whether or not a person really likes you.  
b. How many friends you have depends on how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.  
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.  
b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.  
b. There is a direct connection between how hard I study and the grades I get.

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- 24. a. A good leader expects people to decide for themselves what they should do.  
b. A good leader makes it clear to everybody what their jobs are.
  - 25. a. Many times I feel that I have little influence over the things that happen to me.  
b. It is impossible for me to believe that chance or luck plays an important role in my life.
  - 26. a. People are lonely because they don't try to be friendly.  
b. There's not much use in trying too hard to please people, if they like you, they like you.
  - 27. a. There is too much emphasis on athletics in school.  
b. Team sports are an excellent way to build character.
  - 28. a. What happens to me is my own doing.  
b. Sometimes I feel that I don't have enough control over the direction my life is taking.

RIZZO ROLE CONFLICT AND ROLE AMBIGUITY SCALE

Please use the following code to answer questions 65 thru 78:

A      B      C      D      E      F      G

Very  
False

Very  
True

1. I have clear, planned goals and objectives.
2. I know that I have divided my time properly.
3. I know what my responsibilities are.
4. I know exactly what is expected of me.
5. I feel certain about how much authority I have.
6. Explanation is clear of what has to be done.
7. I have to do things that should be done differently under different conditions.
8. I receive an assignment without the manpower to complete it.
9. I have to buck a rule or policy in order to carry out an assignment.
10. I work with two or more groups who operate quite differently.
11. I receive incompatible requests from two or more people.
12. I do things that are apt to be accepted by one person and not by others.
13. I receive an assignment without adequate resources and materials to execute it.
14. I work on unnecessary things.

# BEM SEX ROLE INVENTORY

Thus, if you feel it is sometimes but infrequently true that you are "forceful", never or almost never true that you are "malicious", always or almost always true that you are "irresponsible", and often true that you are "carefree", then you would rate these characteristics as follows:

Forceful - C  
Malicious - A  
Irresponsible - G  
Carefree - E

## DESCRIBE YOURSELF

A	B	C	D	E	F	G
NEVER OR ALMOST NEVER TRUE	USUALLY NOT TRUE	SOMETIMES BUT INFREQUENTLY TRUE	OCCASIONALLY TRUE	OFTEN TRUE	USUALLY TRUE	ALWAYS OR ALMOST ALWAYS TRUE
1. self-reliant		16. strong personality	31. makes decisions easily			
2. yielding		17. loyal	32. compassionate			
3. helpful		18. unpredictable	33. sincere			
4. defends own beliefs		19. forceful	34. self-sufficient			
5. cheerful		20. feminine	35. eager to soothe hurt feelings			
6. moody		21. reliable	36. conceited			
7. independent		22. analytical	37. dominant			
8. shy		23. sympathetic	38. soft-spoken			
9. conscientious		24. jealous	39. likable			
10. athletic		25. has leadership abilities	40. masculine			
11. affectionate		26. sensitive to the needs of others	41. warm			
12. theatrical		27. truthful	42. solemn			
13. assertive		28. willing to take risks	43. willing to take a stand			
14. flatterable		29. understanding	44. tender			
15. happy		30. secretive	45. friendly			

46. aggressive
47. gullible
48. inefficient
49. acts as a leader
50. childlike
51. adaptable
52. individualistic
53. does not use harsh  
language
54. unsystematic
55. competitive
56. loves children
57. tactful
58. ambitious
59. gentle
60. conventional



# ATTITUDES TOWARD CORE MILITARY VALUES

Use the following scale to answer the following questions:

A	B	C	D	E	F	G	H	I	J
Very Strongly Disagree									Very Strongly Agree

1. \_\_\_\_ I believe in following the chain of command.
2. \_\_\_\_ I feel that having proper military bearing is important of USAF officers.
3. \_\_\_\_ It is important that an officer have a strong sense of honor.
4. \_\_\_\_ Above all, an officer must be ethical in his or her activities.
5. \_\_\_\_ I feel a strong sense of loyalty to the USAF.
6. \_\_\_\_ I feel a strong sense of fellowship with USAFA cadets and officers.
7. \_\_\_\_ The Academy develops a fighting spirit in its graduates.
8. \_\_\_\_ The idea of being a professional military officer appeals to me.
9. \_\_\_\_ I do not know why my intended career field is important to the defense of the U.S.
10. \_\_\_\_ If I don't do my job when I'm on active duty, it won't make any difference to the defense of the U.S.
11. \_\_\_\_ Civilians consider me a second-class citizen because I am in the military.
12. \_\_\_\_ On the whole, I am very satisfied being in the USAF.

# ATTITUDES TOWARD MILITARY RANK AND BEARING

Use the following scale to answer the following questions:

- |  | A        | B | C | D | E | F | G | H | I | J |          |
|--|----------|---|---|---|---|---|---|---|---|---|----------|
|  | Very     |   |   |   |   |   |   |   |   |   | Very     |
|  | Strongly |   |   |   |   |   |   |   |   |   | Strongly |
|  | Disagree |   |   |   |   |   |   |   |   |   | Disagree |
- 
1.    \_\_\_ It is more important for an officer to be obedient rather than innovative.
  2.    \_\_\_ Those holding higher rank than I do should receive deference from subordinates.
  3.    \_\_\_ "Rank has its privileges (RHIP)" is easily justifiable in the Air Force.
  4.    \_\_\_ As part of the military training at the Academy, it is important to have stringent military dress regulations.
  5.    \_\_\_ There is never too much emphasis on the dress and appearance of an officer.

### OCCUPATIONAL ASPIRATION SCALE

1. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER?
  - a. lawyer
  - b. welfare worker for a city government
  - c. United States representative in Congress
  - d. corporal in the Army
  - e. United States Supreme Court justice
  - f. night watchman
  - g. sociologist
  - h. policeman
  - i. county agricultural agent
  - j. filling station attendant
  
2. Of the jobs listed in this question, which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your SCHOOLING IS OVER?
  - a. member of the board of directors of a large corporation
  - b. undertaker
  - c. banker
  - d. machine operator in a factory
  - e. physician (doctor)
  - f. clothes presser in a laundry
  - g. accountant for a large business
  - h. railroad conductor
  - i. railroad engineer
  - j. singer in a night club
  
3. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN GET when your SCHOOLING IS OVER?
  - a. nuclear physicist
  - b. reporter for a daily newspaper
  - c. county judge
  - d. barber
  - e. state governor
  - f. soda fountain clerk
  - g. biologist
  - h. mail carrier
  - i. official of an international labor union
  - j. farm hand

4. Of the jobs listed in this question, which ONE would you choose if you were FREE TO CHOOSE ANY of them you wished when your SCHOOLING IS OVER?
- a. psychologist
  - b. manager of a small store in a city
  - c. head of a department in state government
  - d. clerk in a store
  - e. cabinet member in the federal government
  - f. janitor
  - g. musician in a symphony orchestra
  - h. carpenter
  - i. radio announcer
  - j. coal miner
5. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD?
- a. civil engineer
  - b. bookkeeper
  - c. minister or priest
  - d. streetcar motorman or city bus driver
  - e. diplomat in the United States Foreign Service
  - f. share cropper (one who owns no livestock or farm machinery, and does not manage the farm)
  - g. author of novels
  - h. plumber
  - i. newspaper columnist
  - j. taxi driver
6. Of the jobs listed in this question, which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished?
- a. airline pilot
  - b. insurance agent
  - c. architect
  - d. milk route man
  - e. mayor of a large city
  - f. garbage collector
  - g. captain in the army
  - h. garage mechanic
  - i. owner-operator of a printing shop
  - j. railroad section hand

7. Of the jobs listed in this question, which is the BEST ONE you are REALLY SURE YOU CAN HAVE by the time you are 30 YEARS OLD?
- a. artist who paints pictures that are exhibited in galleries
  - b. traveling salesman for a wholesale concern
  - c. chemist
  - d. truck driver
  - e. college professor
  - f. street sweeper
  - g. building contractor
  - h. local official of a labor union
  - i. electrician
  - j. restaurant waiter
8. Of the jobs listed in this question, which ONE would you choose to have when you are 30 YEARS OLD, if you were FREE TO HAVE ANY of them you wished?
- a. owner of a factory that employs about 100 people
  - b. playground director
  - c. dentist
  - d. lumberjack
  - e. scientist
  - f. shoeshiner
  - g. public school teacher
  - h. owner-operator of a lunch stand
  - i. trained machinist
  - j. dock worker

## GHISELLI SUPERVISORY SCALE

The purpose of this inventory is to obtain a picture of the traits you believe you possess, and to see how you describe yourself. There are no right or wrong answers, so try to describe yourself as accurately and honestly as you can.

In each of the pairs of words below, choose the one you think most describes you.

- |                                     |   |
|-------------------------------------|---|
| 1. a. capable<br>b. discreet        | 6. a. thoughtful<br>b. fair-minded      |
| 2. a. understanding<br>b. thorough  | 7. a. responsible<br>b. reliable        |
| 3. a. cooperative<br>b. inventive   | 8. a. dignified<br>b. civilized         |
| 4. a. persevering<br>b. independent | 9. a. imaginative<br>b. self-controlled |
| 5. a. loyal<br>b. dependable        | 10. a. honest<br>b. generous            |

In each of the pairs of words below, check the one you think least describes you.

- |  |  |
|--|--|
| 11. a. conceited<br>b. infantile       | 16. a. apathetic<br>b. egotistical     |
| 12. a. changeable<br>b. prudish        | 17. a. weak<br>b. selfish              |
| 13. a. careless<br>b. foolish          | 18. a. rattle-brained<br>b. disorderly |
| 14. a. hard-hearted<br>b. self-pitying | 19. a. sly<br>b. excitable             |
| 15. a. dissatisfied<br>b. outspoken    | 20. a. irresponsible<br>b. impatient   |

# ATTITUDES TOWARD FUTURE MARRIAGE AND FAMILY ROLES

1. Try to imagine your life as you would like it to be fifteen years from now. Would you like to be:
  - a. unmarried pursuing a full-time career
  - b. married without children pursuing a career
  - c. married with children pursuing a career
  - d. married without children with both partners pursuing careers
  - e. married with children with both partners pursuing careers
  - f. not pursuing a career and married without children
  - g. not pursuing a career and married with children
2. In thinking about the future, do you think that you:
  - a. definitely will have children
  - b. probably will have children
  - c. don't know
  - d. probably will not have children
  - e. definitely will not have children