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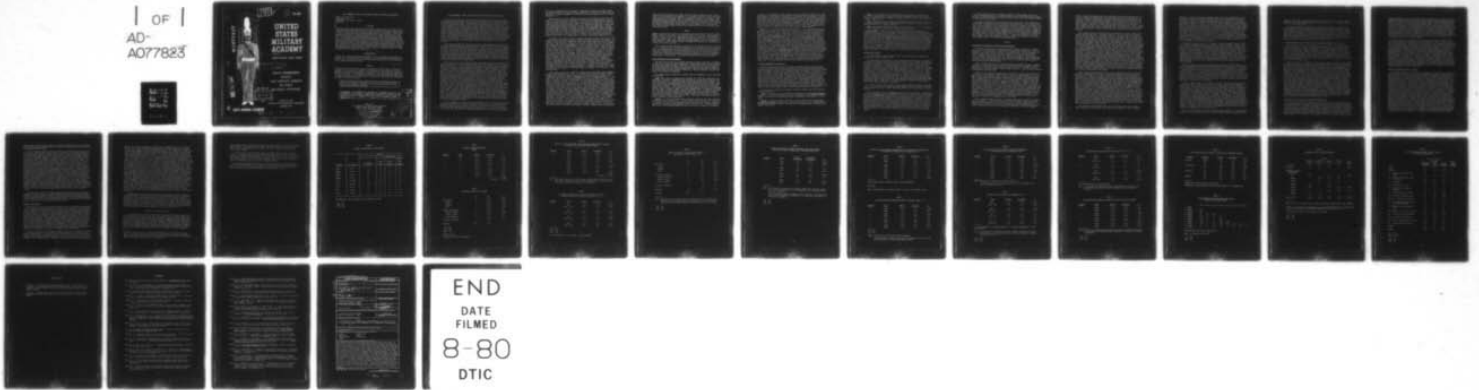
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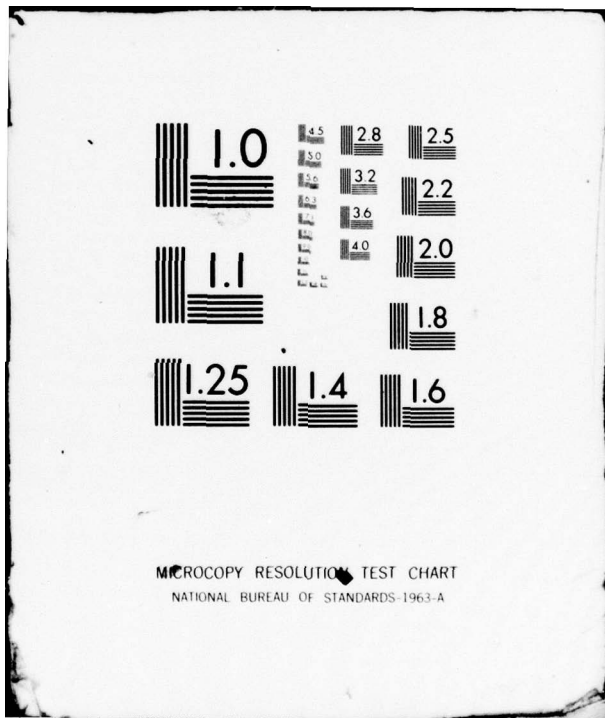
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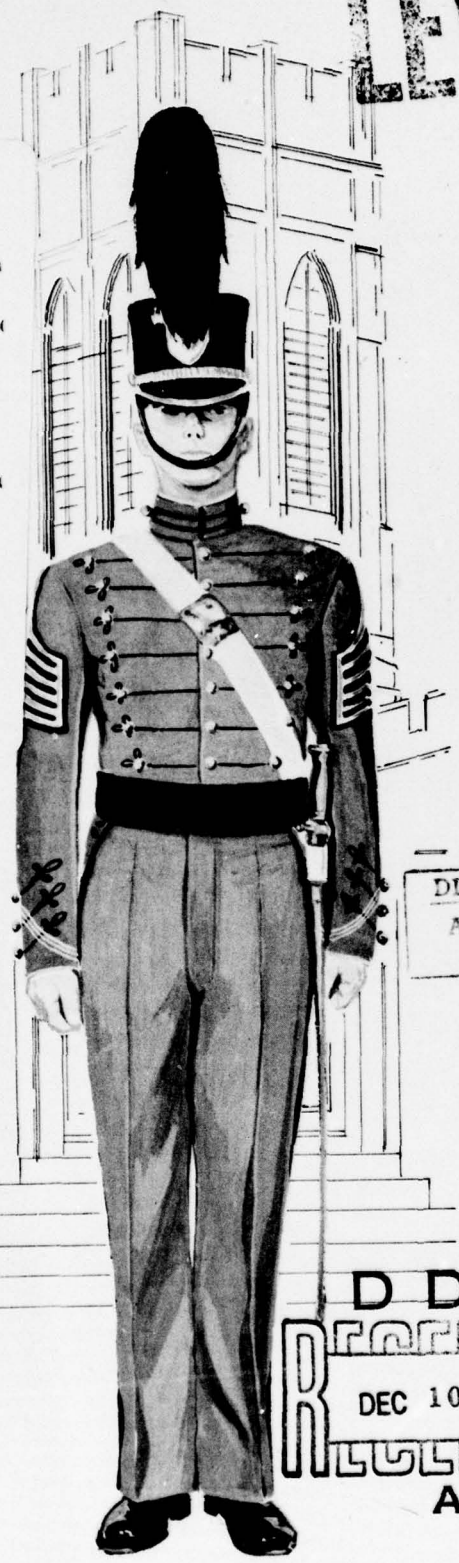


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SEX-ROLE ATTITUDES

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GROUP MEMBERSHIP, STATUS, AND CONTACT EFFECTS ON MALE SEX-ROLE ATTITUDES

Report No. 4Fl.00-78-011
Project No. 211Q
Prepared by: Dr. Robert F. Priest
March 1978

ABSTRACT

This report shows how contact between men and women cadets at West Point affected the attitudes of the men toward women's roles in society and women at West Point specifically. An earlier report showed that contact with women during the first summer training tended to result in relatively negative attitudes among plebes in the same squad. This study focuses on the effects of interaction during the first Academic Year of women at West Point, both among plebes and among upperclass males, in integrated and segregated companies. For involuntary contact, resulting from assignment to an integrated company, the results were complex, depending on the class year of the cadet, his particular regiment, and the attitude variable being considered. Such contact between the sexes was not effective in reducing prejudice, although there were exceptions for some regiments. For voluntary contacts, such as attending women's basketball games, belonging to extracurricular clubs with women, or dating, the more contact a male had, the more positive his attitude. The results are generally consistent with Amir's theory of intergroup contact as a means of company-level and regimental climate.

ACKNOWLEDGMENTS

I would like to thank the following individuals for their assistance in preparing this project: Mr. Claude Bridges, MAJ Alan Vitters, and Dr. Richard Butler for comments on an earlier draft; Lori Schillinger for many statistical analyses; Paul Hirth for data support; and Susan Griffiths for typing.

PREFACE

This report is part of a series of reports stimulated by Project Athena. The object of the project is to determine the impact of the admission of women to West Point on the Academy, and the impact of the Academy on the women cadets. The Project is co-directed by MAJ Alan S. Vitters, of the Department of Behavioral Science and Leadership, USMA; and Dr. Nora Scott Kinzer, of the Army Research Institute. This particular report focuses on the impact of women on male attitudes, and is the second of two reports which investigate the effect of intergender contact.

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GROUP MEMBERSHIP, STATUS, AND CONTACT EFFECTS ON MALE SEX-ROLE ATTITUDES

Under certain circumstances, the more contact individuals in one social group have with members of another social group, the less likely that one group would hold prejudicial attitudes toward the other. Circumstances most favorable to the reduction of prejudice were stated by Amir (1969), after reviewing a number of research studies on the "contact hypothesis in ethnic relations." Before women were admitted to West Point, there was an attempt to apply intergroup contact theory to planning for the admission of women cadets (Futernick, 1976). The distinction between prejudiced attitudes and prejudicial behavior (discrimination) was taken as one of the keys to a successful approach; it was indicated that key authority figures in the Academy environment should be role models to create an atmosphere where overt discriminatory behavior would not be tolerated. Secondly, it was emphasized that women cadets should be viewed as working toward common goals with the male cadets (one of the favorable conditions stated by Amir), in a "single track" system. It was assumed that the women cadets would be highly competent, and that over time, unfavorable gender stereotypes would break down, thus leading to a reduction in prejudice.

Before women were admitted to West Point, the top Academy leadership planned extensively and consulted widely with recognized experts. After extensive discussion, faculty were highly positive toward nontraditional roles for women in society, in the Army, and at West Point, in the last few months of planning. In contrast, cadets had not been as much involved in the planning, and they were generally traditional in their attitudes and beliefs about the roles of women in society, in the Army, and at West Point (Priest, 1976a). There was some evidence that cadets had begun to adopt more nontraditional attitudes, but the predominant mood was negative toward the admission of women to West Point (Priest, 1976b). Thus, while authorities worked to define nondiscriminatory regulations and ideal standards following a single-track system, the upperclass cadets continued to conform to a norm opposing the admission of women cadets.

Women cadets in the Class of 1980 were equal in intellectual ability and motivation to the men at entrance, but not in absolute levels of physical performance (Priest, Prince, Rhone, Vitters, 1977). If they had been exactly equal, there probably would have been few problems in integrating them into the Corps of Cadets. By law, the women were exempted from having to conform to male standards of performance in physical training, and in certain items of military training because of the "physiological differences between the sexes." Rather than move immediately toward individualized instruction in these areas, West Point strove to preserve the "one-track" programs. By the end of the summer, women cadets had experienced a greater rate of physical injuries and failures to complete certain physical training than the men (Vitters & Kinzer, 1976). Women reported more discriminatory treatment than men, particularly if they were in poor physical condition (Priest, 1977a). Thus, the idealized conditions for favorable intergroup contact, envisaged by Futernick, were not realized in the first few months of Summer Training. It was shown, in fact, that men who had fairly close interpersonal contact with women at the squad level tended to have more unfavorable attitudes toward women. In some cadet companies, squad-level contact had a favorable impact, but the overall impact was negative (Priest, 1977b). The Air Force Academy reported a similar increase in negative attitudes after Summer Training; so the results are not confined just to West Point (Defleur & Gilman, 1977). Civilian colleges which had gone through a process introducing women students into a predominately male student body reported that instances of male chauvinism tended to persist for a long time after the first admitted class of women, sometimes as long as four years after the change (Bohen, 1972). In the latter report, it is not possible to determine whether the negative incidents were due to persisting negative attitudes which were gradually getting better, or to attitudes which became more unfavorable as a result of non-optimal contact.

This paper addresses the issue of whether intergender contact produced more favorable attitudes toward women's roles among men cadets at the end of the first academic year. Measures of cadet attitudes to women in the Army, to women at West Point, and women in society were taken near the end of the 1976-77 academic year. The goal of this analysis is to improve our understanding of intergroup contact and thus show how future change at

the Military Academy might best be managed. Furthermore, the aim is to clarify, update, and refine the model of intergroup contact proposed by Amir (1969), and to apply it to explaining the attitudes of cadets at the end of the first full academic year of intergender integration.

Before analyzing the data, a summary of conditions at West Point during the 1976-1977 Academic Year will be presented which may have a bearing on the applicability of Amir's model for reducing prejudice at West Point. A previous report (Priest, 1977b) summarized conditions during 1976 Summer Training which were favorable and unfavorable to the reduction of prejudice through intergroup contact. This review will focus only on those conditions which may have changed, for better or worse, during the academic year. Secondly, the previous report focused on the effect of women on the attitudes of their male peers in the Class of 1980; this report increases the scope of the analysis to include the effect of the CY 80 women on the men in two upperclass groups, the Class of 1979 (CY 79) and the Class of 1978 (CY 78). Finally, the previous report focused on contact at the smallest possible organizational unit (the squad); in contrast, the present analysis focuses on contact at the level of the company, which is a larger, more complex organizational unit.

According to Amir's model, contacts between men and women in the Fourth Class are equal status contacts, and would be expected to promote a favorable reduction in prejudice. In contrast, contacts between a woman Fourth Class cadet and an upperclass cadet would not be expected to reduce upperclass prejudice. During the academic year, there was no evidence that Academy authorities had increased their level of positive support for intergroup contact, beyond the initial commitment made, to careful planning and fair, impartial administration. There was no increase in the intimacy of intergroup contact, as defined by Amir. The Fourth Class System is designed to become progressively easier as the year progresses (Malcomb, Finley, Renfrow, 1976, p.2). Because of the progressive relaxation of restrictions, it was expected that intergroup contacts would become more pleasant as the year progressed, and according to the model, provide more favorable conditions for the reduction of prejudice. During the Academic Year, both men and women Fourth Classmen participated in extracurricular activities; such voluntary activities would be expected to provide a sense of common purpose, and would be favorable to reducing intergroup hostility. The emergence of a highly successful women's basketball team, though it did not result in male-female contact directly, may have had the effect of creating a perception that women cadets were working toward the same goals of interscholastic competitive achievement as the men; thus, it might contribute to a perception of common goals, and be favorable to the reduction of intergroup prejudice. In general, then there were a number of conditions which according to the model, should be favorable to the reduction of intergroup hostility.

Amir's model also outlines a number of conditions which would tend to make intergroup contact be counter-productive. There is no evidence that men and women were, as groups, systematically induced to compete with each other as groups during the academic year. (Competition for academic grades is individual competition--not group competition.) Some cadets may, however, have interpreted the publicity given by the press to women as a competitive situation; likewise, the assignment of scarce leadership positions to 4th Class women. According to Kanter's theory (1977), such heightened awareness of the potentially competitive aspects of intergroup contact is an almost inevitable result of mixing a small percentage of women with a larger group of men. This condition would have been constant during CBT and the academic year, so it would not increase prejudice. Furthermore, there is reason to believe that stress and frustration levels may have varied considerably from one company to another, especially between the different regiments. Although one expects a high degree of similarity between different regiments in basic matters of organization and regulations, there is an informal tradition among West Pointers that regiments have different organizational climates. For example, one regiment is said to emphasize strict discipline and military polish, while another tends to be much laxer in its enforcement of regulations. As a result, an interaction between regiment and contact at the company level may be predicted. While interaction among all the members of a company of 100 people is less intense, in contrast to the interaction among a squad of 10, there are compensating factors which should make the impact of company-level contact during the academic year as great as the impact of squad-level contact during the CBT. In addition to the varying levels of frustration and stress in different companies, which may have been

present during the academic year, another potential cause of scapegoating must be examined--the honor scandal and its aftermath. For the cadets directly involved, the stresses created during the honor scandal would have reached their peak during the summer of 1976, rather than during the 76-77AY. Thus, it is plausible to assume in this research, that honor-related stress perceptions would be lower during the AY; and hence, conditions for favorable intergender contact would be better. In general, after examining the conditions for favorable and unfavorable group contact during the academic year, as specified by Amir's Model, there is reason to believe that conditions would be on the whole more favorable than during CBT.

Method

Sample: Two alternative Forms of the questionnaire were distributed through the company tactical officer to all cadets in the Classes of 1978, 1979, and 1980. See Appendix 1 for copies of these two forms. The survey was distributed on 20 April 1977 and returned on 28 April, through the S1, USCC. Approximately equal numbers of cadets in each group took Form A and Form B. There were a total of 2,594 usable returns, out of 3,146 cadets in these classes (a "usable return" is defined by completion of Questions 1 (Class Year) and 4 (Sex) on the survey, at least).

The percentage of return was 86% for the Class of 1980, 79% for the Class of 1979, and 82% for the Class of 1978. The overall response rate is considered high for mail surveys, but it is significantly lower than the 93% response rate for the Project Athena Questionnaire given in March 1976. The lower response rate for this survey may be due to the later date of administration (early March versus late April), to the effect of competing surveys (such as the DA Survey of Cadet Professional Development, given to randomly selected cadets, 7-12 April 1977), or to specific antagonism to Project Athena itself.

Survey Rationale and Scale Development

The goals of the survey were to measure attitudes to women at West Point, to women in the Army, self-concept, perceived discrimination, company cohesiveness, and beliefs about the philosophy of equal treatment. Obviously, an attitude survey is not the only indicator of how successfully the integration of women at West Point has proceeded; behavior, and organizational planning must be considered for a complete evaluation. Nevertheless, an attitude survey can give systematic information on the often neglected "feeling" component of the process of integration.

The following scales, consisting of several items, were embedded in one or both forms of the survey:

ARIAN - Both forms of the questionnaire contained the 7-item scale developed at the Army Research Institute to measure sex-role attitudes in the Army (Savell & Welfel, 1977; items 10-12, and 20-23). These were scaled so that USMA data would be comparable to results obtained from a November/December 1975 sample survey of the Army as a whole. Negative scores indicate more traditional sex-role attitudes; positive scores indicate more equalitarian attitudes. A very traditional individual tends to believe: that the Army's mission is best carried out by men only; that the effectiveness of the Army would decrease with more women in command in combat; that women commanders won't be respected; that women don't make good front-line soldiers; and that women should not be included in space missions. Research reported elsewhere shows that USMA cadets have many more traditional, stereotyped beliefs about the abilities of women soldiers than Army personnel, either officer or enlisted (Priest, Prince, Vitters, 1977). This scale is one which would be expected to change as a result of contact.

EQUALITY - A 4-item forced choice scale intended to measure belief in the rigid application of an equal treatment policy. A content analysis of spontaneous cadet comments on the admission of women, made by upperclass cadets before women were admitted, revealed a high degree of concern for strict equality (Priest & Houston, 1976). The law admitting women to West Point mandates a departure from a policy of strict equality of treatment.

In addition, the Commandant of Cadets favored a policy of equality of stress, with stress being measured to some extent "in the eyes of the stessee, not the stressor." In a previous sample, it was shown that this measure correlates .25 with the Spence AWS, and thus partially reflects traditional sex-role attitudes in general. Three of the items refer specifically to West Point; and therefore, it was expected that this scale would be highly sensitive to any general trends in anti-female prejudice. A three-item version of the scale was given to the Class of 1980 after CBT, and the results showed a direct negative effect of contact with women at the squad level (Priest, 1977b). For comparison to the previous results, in this analysis, the 3-item version is termed EKWALITY.

HARSH - A 2-item measure of perceived discrimination. It is the difference between perceiving being treated more severely due to race, sex, or ethnicity, and being treated more kindly due to race, sex, or ethnicity. An analysis of the items in the measure is presented in an earlier report (Priest, March 1977). The two items subsumed by this measure are termed victimization (referring to the perception of being treated more severely than other cadets due to race, sex, or ethnicity, and protection (perception of being treated more kindly than other cadets, due to race, sex, or ethnicity). A third item, termed jealousy, refers to the perceptions that other cadets (not the respondent himself) are being treated more kindly due to race, sex, or ethnicity. Research (Priest, 15 April 1977) shows that there are significant differences due to race and religion, as well as sex. In this analysis, these three items are used as indicators of perceived sex discrimination, ignoring the possible error variance associated with perceived sex discrimination due to race or ethnicity. In this analysis, item 30, Form B (30B) was used to validate the assumption that victimization does measure gender-based perceived discrimination: among men plebes in integrated companies (N=134), the correlation of item 34B with victimization was -.35 (p<.001); among women, the correlation was -.67 (N=46, p<.001). Thus, there is evidence that victimization does reflect gender-based discrimination. After CBT, both victimization and jealousy scores were higher in high contact squads in most companies (Priest, 1977b, pp.10-11). Thus, it was expected that victimization and jealousy might show a similar pattern in the End of Academic Year Survey, but perhaps weaker, due to the more favorable climate for intergroup climate described above.

Attitudes Toward Women at West Point

Item 13, "How do you feel about the admission of women to West Point?" was used in several previous analyses, and correlates highly with more generalized measures of sex-role traditionalism. Items 14A and 14B were designed to measure perceived attitude change toward the admission of women of the individual and his peer groups. If contact with women is favorable, cadets should become more favorable to the "admission of women to West Point" as a topic; however, these items may also be interpreted as a reference to a specific historic event, the decision to admit women, rather than as a reference to the specific women who were admitted. Conceivably, cadets might differentiate cognitively between these two aspects of the admission of women. The following sets of items also contain specific references to women at West Point: items 24A-30A, items 24B-30B, and items 59A-63A. Items which refer specifically to women at West Point should reflect the effects of intergroup contact more than items which refer to women's roles in general. Item 15A refers to the preferred speed of integration of the Corps of Cadets, and item 15B refers to reasons which might be used to justify the particular pace of integration.

The survey also included several measures designed to measure group functioning and individual adjustment.:

ACOHES - A measure of company cohesiveness, adapted from the Work Group Descriptions (Stogdill, 1965). High scores indicate that the individual often or "always" felt that members of his company were friendly, cooperative, dependable, and supportive. (Form A only)

ACONFORM - A measure of company pressures to conform, adapted from the Work Group Descriptions Inventory (Stogdill, 1965). High scores indicate that the company often puts pressure on nonconformists; members are expected to work equally hard; "the company has rules." (Form A only)

BSATIS - A 15-item measure of satisfaction with various aspects of cadet life on Form B of the questionnaire. High scores indicate dissatisfaction with such items as billeting, dating, privileges, parades & ceremonies, or cadet uniforms. These items were written by MAJ Vitters.

RUSMA - Cadets were asked to estimate the likelihood that they would "resign voluntarily from USMA before I incur a service obligation," with responses ranging from: (1) extremely likely, to (7) extremely unlikely.

RARMY - The estimated likelihood of "resign from the Army as soon as I have completed my service obligation," using the same 7-point scale as in RUSMA.

MALVAL, FEMVAL: Two scores from the Personal Attributes Questionnaire (Spence, Helmreich, and Stapp, 1974). The Personal Attributes Self-rating Scale measures a particular type of masculinity and femininity. The Masculinity Scale, or "male-valued items" (MALVAL) represent self-attributions which are considered stereotypically masculine in our culture, and which are also considered desirable (by college students) for both genders to have. The Femininity Scale (FEMVAL) represents self-attributions which are stereotypically feminine and which are considered by college students desirable for both the ideal man and the ideal woman (see Spence, pp. 8-9, 13-14). In the short form used here (p.39), scores range from 0 to 32, with higher scores reflecting more masculinity and more femininity. The two scales are relatively uncorrelated with each other; they are not polar opposites, as is assumed in common usage. These scales were included in the survey to measure cadet adjustment; and hence, it was not expected that they would be particularly sensitive measures of anti-female prejudice of the kind specified by Amir's Model.

Procedures of Analysis

A content analysis of cadet responses to the open-ended questions is presented in another report (Priest & Houston, 1977).

The major analysis was a series of t-tests comparing the means of males in companies with women with the means of males without women, controlling for regiment and class year. To simplify the analysis, data from the Classes of 1978 and 1979 were pooled and are referred to as "upperclass." The theory makes no predictions about various degrees of unequal-status contact, so it seemed advisable to pool the data. Following the rationale described in the previous report on the contact hypothesis (Priest, 1977b, p.3), the eight regiment x class year subgroups t-tests were summarized in an overall χ^2 test. If that chi square test was significant at the .05 level, it was followed by a 2 x 2 x 3 least squares analysis of variance (ANOVA), in order to identify precisely the source: contact regiment, class year, or one of their interactions. The two questionnaires include a total of 93 different fixed-response questions. To control for artifacts that would be introduced by testing all 93 items singly, only major scales identified above were tested in the first stage of analysis; that is, ARIAW, EQUALITY, HARSH, ACOHES, ACONFORM, BSATIS, RUSMA, RARMY, MALVAL, FEMVAL, plus the remaining items not subsumed by these scales, a total of 42 t-tests per regiment & class year.

In order to explore trends in the data, the following subsidiary analyses were undertaken. First, the items in the BSATIS Scale were examined for contact effects, using the 8 within-regiment class year t-tests, followed by ANOVAS, as outlined above, for the main analysis.

The above analyses refer to involuntary contact between men and women. To explore the effects of voluntary contact, male responses to questions on attendance at women's basketball games, participation in extracurricular activities with women, and dating were associated with attitudes toward women at West Point and women's roles in general. One would expect that voluntary contact would have a more favorable effect on attitudes than involuntary contact, according to theory. Measures of involuntary contact do not have the methodological artifacts (such as the tendency to agree blindly with all opinion statements), in contrast to all self-reported measures of feeling and behavior (including the voluntary contact measures). Thus, if we find intergroup contact effects with involuntary contact measures, we can be more confident that they are uncontaminated by methodological artifact. For that reason, the main focus of the analysis is on involuntary contact.

Correlations among scales were computed separately for women cadets, and for men plebes in integrated companies. Selected correlations will be presented below to evaluate the amount of redundant information among the various scales, and to give further evidence on the validity of the scales.

The analyses reported here will undoubtedly raise many questions about differences in cohesiveness and satisfaction among the 36 different company units. This Office has very little precise information on the psychological climate of the company, its stability over time, or the influence of tactical officer style on company climate. In this report, company climate and regimental climate are referred to as intervening variables. A number of analyses of variances were conducted, comparing the responses of men in the 12 companies with women, to see if, disregarding regimental climate, there were significant differences in company climate. Similarly, ANOVAS compared men in the 24 companies with no women, to see if company climate had a significant effect. Although these analyses do not have a direct bearing on the contact hypothesis, they were used to help establish the existence of "company climate" as an important intervening variable.

Results

An Overview of the Effects of Contact on Male Attitudes

This section will present the results of the main analysis, the effects of company-level contact with women plebes on the attitudes of upperclass and plebe men in the four regiments. Of the 42 variables considered in the main analysis, 9 had statistically significant contact effects at the .05 level, controlling for class year and regiment. Table 1 presents the chi square tests, and a summary of the relevant portions of the 2 x 2 x 3 ANOVAS, omitting main effects for class year and regiment. After examining the individual items in the satisfaction scale, 3 additional significant contact effects were discovered in the subsidiary analysis. Details on the 12 variables showing contact effects are presented in subsequent tables.

Table 2 presents the mean level of perceived company cohesiveness by class, regiment and contact. A condensed version of this table without a breakout by regiment, has been published in several other reports (Vitters, Kinzer, Priest, Oct 77, Table 8; Priest, Prince, Vitters, Sep 1977, Table 4; Vitters & Kinzer, Sep 1977). Thus, the basic findings are familiar to a wide audience.

The present discussion will illustrate the method used to analyze contact effects in this paper. In the right-hand column of Table 2, the t-test shows whether or not contact had a statistically significant effect in that particular regiment and class year alone. The chi square shows that the combined evidence from all 8 groups is considered significant. The data show that in Regiments 1-3, men in companies with women had lower levels of perceived cohesiveness than men in companies without women. In Regiment 4, the opposite effect occurred; the no-contact companies were less cohesive. Table 3 shows the results of the complete analysis of variance of the cohesiveness scores in the tables. It shows that the main effect of contact is significant; that is, men in no-contact companies were, overall, more cohesive. It shows that the main effect of class is significant; that is, independent of contact, plebes tend to perceive their companies as significantly more cohesive. It shows that the contact x regiment interaction is significant; that is, independent of the main effects, contact produces different effects on different regiments. The ANOVA helps to identify other factors which explain cohesiveness in addition to contact, and it helps to evaluate whether or not interactions between contact and other variables are significant, independent of the main effects.

Table 4 shows the effect of contact on attitudes toward women in the Army by contact, class, and regiment. A condensed version of this table, without a breakout by regiment, has been presented elsewhere (Vitters & Kinzer, Sep 77, Table 53; Priest, Prince, & Vitters, Sep '77, Table 4). The results are complicated, and the analysis was not able to isolate significant main effects or interaction; nevertheless, in the Third Regiment,

plebes in contact companies were much more traditional in their attitudes than plebes in no-contact companies. Upperclassmen in the Third Regiment showed the same effect. In contrast, in the Second Regiment, the opposite effect--contact with women promoted more accepting attitudes. In the remaining regiments, contact made plebes slightly more non-accepting (i.e., traditional) whereas it made the upper class much more accepting. The latter finding is contrary to the equal-status contact prediction. The findings of Table 4 demonstrate that contact with women had complex and unpredictable effects, depending on regiment and class, but were nevertheless real. In the report on contact effects after CBT, the attitudes to women in society (Spence's AWS) showed a similar degree of complexity.

Table 5 shows the mean self-reported change in favorability to women's admission by contact, regiment, and class. It should be noted that in all 16 groups, men reported changing their attitudes in an unfavorable direction. This basic fact is documented by Vitters and Kinzer (Table 52, 1977); about a third of the cadets report no change, while over twice as many became more unfavorable toward the admission of women as became more favorable. The reader should recall that, in interpreting a single attitude item such as this one, many irrelevant biases may influence the responses, in addition to the one intended by the researcher. Thus, interest focuses on the differences among groups, and not on the absolute level of response to the item. Table 5 shows that plebes in two regiments (1 & 3) were changing more unfavorably in contact companies than in no-contact companies. In contrast, upperclassmen in contact with women did not change to unfavorable views as fast as upperclassmen not in contact. Table 6 shows that the main effect of class was significant: men in the Class of 1980, overall, tended to be slower to become unfavorable, while men in the upper class tended to change more negatively. It also shows a highly significant contact x class interaction--contact made plebes relatively less favorable, while making upperclassmen relatively more favorable, as described above. It is worth noting that analysis of a similarly worded item from Form B did not reveal any significant differences by contact. In both items, the mean response for males indicated that men had become unfavorable to the admission of women over the last five months, regardless of whether the question asked about "your attitudes" (Form A) or "the attitude of your peers" (Form B). The projectively worded question (about peers, Form B) did not detect contact effects, whereas the direct question (your own attitude, Form A) did. Clearly, contact had an effect on male attitude change, but it takes a well-chosen question to demonstrate the effect. Contrary to Amir's theory, equal status contact did not promote more favorable attitudes than unequal status contact.

Table 7 shows the mean degree of belief in one of three kinds of policy for handling the speed of integration in the future. The percentage distribution for this item (Priest, Prince, Vitters, 1977, Table 6) shows that a majority of cadets preferred the most rapid of all integration speeds; since this was the policy eventually adopted, the majority of cadets correctly anticipated the official Academy position, perhaps influencing it. As Table 7 shows, in every regiment and class, the men in contact companies had lower scores, indicating greater favorability to placing women in all 36 companies next year. On the surface, this item seems to reflect a positive feeling toward integration. However, it could also reflect a perception that women cadets are a liability for any company (for example, in intramural athletic competition), and a consequently greater desire on the part of the 12 integrated companies to share that liability. It is as if the cadets were saying, "we don't like women at West Point, but as long as they are here, they should be in every company, as soon as possible." Analysis of a parallel speed of integration item on the alternative form of the questionnaire (item 15B) failed to reveal significant contact effects. The no-contact men could have rationalized their go-slow policy (item 15A), by indicating that "maintaining group solidarity among women" was more important than "integrating the Corps as rapidly as possible" (item 15B); but evidently, they did not do so on a systematic basis; in fact, among the plebe men in contact companies there was some evidence of a relatively greater concern for group solidarity among women. In contrast to the findings in the previous tables, Table 7 suggests that contact had a favorable impact on men's attitudes.

Table 8 shows the mean agreement that "sexual attraction between male and female cadets interferes with functioning of the cadet chain of command." This item showed

significant contact effects, while a somewhat similar item on the alternate form of the survey did not ("male and female cadets should avoid sexual liaisons with each other"). In Regiment 3, plebe men in contact companies agreed more strongly with the item than in non-contact companies. In Regiment 4, particularly among the upper class, the opposite effect occurs. Agreement with this item tends to indicate traditional, negative feelings toward women. That is, in Regiment 3, contact made men more traditional, whereas in Regiment 4, it made them more nontraditional. The differences between Regiment 3 and Regiment 4 in this table are generally consistent with findings of Tables 2-7. The ANOVA showed a significant main effect of class: upper class were more likely to agree with the item than plebes, indicating a more traditional attitude. It is important to add a word of caution here, lest the accidental characteristics of this item be misinterpreted. The belief that sexual attraction interferes with the chain-of-command may be a generalized, traditional stereotype, or it may be seen as a more particular reference to how the cadet perceives the chain-of-command to function in his particular company. It would not necessarily be correct to interpret Table 8 as a reference to the actual functioning of the chain-of-command in each company and regiment.

Table 9 shows the mean frequency of attendance at women's basketball games. Attendance at women's basketball games is an indication of positive feelings to women at West Point, since it tends to correlate moderately with positive attitudes. In Table 9, the strongest effects of contact are concentrated among the plebes, as would be expected by the theory. The atmosphere of the regiments moderate the contact effect, however. In Regiment 1, plebes in contact attend fewer games than plebes not in contact. In Regiment 2, plebes in contact attend more games. The data may indicate support for particular women athletes in these companies. Similar differences among regiments were found in previous tables. Unfortunately, we have no data on attendance at men's athletic events of comparable size, which would allow a more specific interpretation of the extent of anti-female bias present in these data. The ANOVA shows that regiment has a significant main effect; generally, the 2nd and 3rd Regiments had lower rates of attendance than the 1st and 4th Regiments.

Table 10 indicates how often men reported being recognized as Fourth Classmen. We have no supplementary data which might help distinguish between legitimate acts of recognition, and those which violate the Fourth Class System. In Regiments 2 and 3, plebe men in integrated companies were recognized significantly less often than men in segregated, all-male companies. In the other regiments, the trend was nonsignificant, but in the opposite direction. To the extent that recognition is regarded as a social reward for plebes, then male plebes in all-male companies received higher levels of this reward. The data are consistent with data on company cohesiveness reported in Table 2. It should be noted that "Fourth Class recognition" is totally irrelevant for upperclass cadets, and the data show that contact effects are smaller for them. In general, contact had an unfavorable effect on male plebes on this measure.

As Table 1 shows, contact had a significant effect on male cadet satisfaction, controlling for class and regiment. An analysis of variance, and the means themselves, revealed a complicated pattern of results, with no clearly significant main effects or interactions. A series of subsidiary analyses were undertaken to discover an explanation for the findings. Tables 11 and 12 present two specific items within the satisfaction scale which showed significant contact effects and clear interpretations. In Table 11, satisfaction with parades and ceremonies, men with no women in their company were more satisfied (i.e., lower scores) than men in integrated companies. In addition, there was a significant interaction between contact & regiment: in Regiments 2 & 4, plebes were more satisfied in integrated companies, whereas in the other regiments, they were more satisfied in integrated companies, whereas in the other regiments, they were less satisfied. In Table 12, satisfaction with "my tactical officer," there was a significant main effect of class (plebes more satisfied than upperclassmen), and an interaction between contact & regiment. In the Fourth Regiment, contact had a beneficial effect on male satisfaction; in contrast, contact in the 1st & 3rd Regiments had a negative effect on satisfaction. In general, Tables 11 and 12 show that regimental climate can have a strong effect on the favorability of intergroup contact.

Table 13 shows the effect of contact on psychological femininity. In every regiment, plebes in contact with women were less willing to attribute feminine characteristics to

themselves than plebes in segregated companies, particularly so in the Second and Fourth Regiments. Thus, some plebe self-perception was less positive in the integrated companies than in the segregated companies.

In general, considering the evidence in Tables 1-13 as a whole, contact between the sexes was not effective in uniformly producing favorable attitudes toward women. Regimental climate has a strong influence on the direction that attitudes change when intergroup contact is established. With some exceptions for some regiments, contact produced lower company cohesiveness, more stereotyped views of women's roles in the Army, a stereotypical belief that sexual attraction hurts the chain-of-command, a lowered degree of recognition for Fourth Classmen, and lower satisfaction, especially among plebes. There were a few exceptions, but for most variables the magnitude of the contact effect was greater for plebes than for upperclassmen, as predicted by theory.

A Comparison between Contact Effects After CBT and After Academic Year Interaction

The previous section has presented data on significant effects of intergroup contact on male attitudes after 7 months of company-level interaction during the academic year. In a previous report, the effects of squad-level contact during Summer Training were tested. It is possible to compare the effects of contact with women under the two different conditions. Table 14 presents the data on male plebe attitude in the two contact groups. As the table shows, contact at the squad level during CBT had a significant impact on equality, victimization, and jealousy. These findings were presented and discussed in the previous report (Priest, June 1977). The table also shows that contact did not have a significant effect on the same variables after 7 months of company-level interaction during the academic year.

There are a number of circumstances which should be taken into account in interpreting the results of Table 14. In general, the interaction between men and women during Summer Training was probably more localized within the unit than during the academic year, when men and women may interact in the classroom, regardless of their company assignments. In addition, during the academic year, plebes from the high and low contact Summer Training squads would have probably been assigned equally often to high and low contact permanent companies. First impressions count. Because of the earlier contact or lack of it, the contact during the academic year would tend to have relatively less impact on male plebe impressions of women. Table 1 shows that academic year contact did affect male attitudes, but Table 14 shows that it did not have an effect on the same dimensions of cadet perception as contact during Summer Training. Table 14 suggests that male plebes in contact with women during CBT were more preoccupied with exact equality "with no exceptions" than were male plebes in contact with women during the academic year. They were, evidently, more concerned with company cohesiveness during the academic year. As Table 14 shows, there was a small but fairly consistent increase in perceptions of discriminatory treatment during the academic year (Priest, 16 June MFR), it may be that rumors of discriminatory treatment were common to the entire Corps, rather than being localized to the companies where certain incidents were alleged to occur. Relatively few such rumors were communicated by cadets in open-ended comments on the survey (Priest & Houston, 1977), but cadets did indicate that perceived inequitable treatment accorded the sexes was important in evaluating the success of the integration at that time. In general, it is concluded that academic year interaction with women had an impact on different dimensions of male plebe attitude than did interaction during Summer Training.

Dimensions of the Contact Effect During the Academic Year

The preceding analysis has suggested that contact with women may have different effects on male attitudes, depending on the particular dimension of attitude being measured. The results of Table 1, for example, may represent nine separate, independent dimensions of cadet attitude, or they may represent highly overlapping redundant measures of the same underlying attitude toward women. If the latter is correct, it would affect the interpretation of the results. Table 15 presents correlations between the measures which were found to have significant contact effects, among a sample of men in segregated and integrated companies. For this group, it is evident that the nine attitude variables are not

completely independent, but the correlations are low in magnitude. For example, men with traditional attitudes to women in the Army (ARIAW) tended to become more unfavorable to women over the past five months (A14) ($r=-.37$), and tended to believe that sexual attraction was interfering with the cadet chain-of-command (A24) ($r=.33$). Nevertheless, attitudes to women in the Army were uncorrelated with company cohesiveness, satisfaction, or psychological femininity. A similar analysis may be made of the other correlations in the table. It is concluded that the variables which show a significant effect of contact did not reflect a highly redundant, overlapping set of variables. Instead, the variables which show a significant contact effect appear to be fairly separate dimensions of cadet attitude toward various features of women in the Army and women at West Point. Because the variables are not highly intercorrelated, it suggests that attitudes toward women were not highly polarized, and that cadets were reacting to each issue as a separate case rather than on the basis of global stereotypes.

In order to confirm the independence of the several dimensions of contact effect, a discriminant analysis was performed for each plebe regiment. Table 16 presents the results. The multivariate F shows that, in each regiment, all seven variables selected for the analysis discriminate significantly as a set between men in contact with women and men not in contact with women. The discriminant coefficients indicate the relative importance of each variable for differentiating the two groups in each regiment. In Regiment 1, perceived company cohesiveness, changes in feelings toward the admission of women, and preferred speed of integrating all 36 companies, each contribute significantly to the discriminant function. In Regiment 2, attitudes to women in the Army, and attendance at basketball games, contribute significantly. In Regiment 3, attitudes to women in the Army, changes in feelings toward the admission of women, and preferred speed of integration contribute. In Regiment 4, the belief about sex "interfering" with the chain-of-command contributed significantly. For all men in the sample, regardless of class year or regiment, perceived cohesiveness, and preferred speed of integration, were significant. Thus, no single variable contributed significantly in all regiments; but in nearly every regiment, at least two variables were significant. These results confirm and clarify the results of previous analyses: contact does affect attitudes; but depending on the group, different dimensions of contact are affected.

Effects of Voluntary Contact with Women

The preceding analysis has focused on contact between men and women which results from their assignment to groups. As a result of assignment to a company or a squad, men and women interact in the barracks and in common activities because the situation requires it. The association is not necessarily one which is actively sought by the participants. In contrast, when men and women associate together voluntarily, the theory predicts a much stronger contact effect. The end-of-year survey yielded measures on three forms of voluntary contact with women: attendance at the women's basketball games, membership in extracurricular clubs which have women as members, and dating (this latter question was restricted to the Class of 1980). Table 16 presents a summary of selected correlations using the three measures of voluntary contact and cadet attitude; only the larger, more significant, correlations will be discussed below, since the main point of the table is to demonstrate the existence of a voluntary contact effect on some dimensions of attitude. Variables which did not correlate significantly with two or more indicators of voluntary contact were excluded from the table. In general, Table 17 shows that voluntary contact indicators have a significant relationship to a number of attitude toward women items. For example, attendance at basketball games correlates significantly with attitudes to women in the Army (ARIAW)--the more frequently a man attended women's basketball games, the less traditional was his attitude. The table also indicates that feelings about the admission of women to West Point (VAR13) were more positive when cadets attended more basketball games, belonged to more integrated clubs, and dated more women cadets. Because the interpretation of correlations is often tricky due to the arbitrary direction of the scales, the right-hand column of the table indicates whether or not the correlation of each variable with the three measures of voluntary contact either confirms Amir's theory (Y), disconfirms it (N), or provides no evidence (?). The magnitude of the correlations in Table 17 is low, as is typical for correlations between single items measuring attitudes and highly specific behavior. It is important to note, however, that in every

instance where a decision could be made, the correlations support rather than disconfirm Amir's prediction that voluntary contact with women is associated with more nontraditional attitudes toward women's roles.

The alert reader may wonder if the above results are confounded with involuntary contact effects, since the correlations of Table 17 include men in segregated companies, as well as integrated companies. To make sure the results are not so confounded, separate correlations were computed for each of four groups: (1) plebes in integrated companies; (2) plebes in segregated companies; (3) upperclass cadets in segregated companies; and (4) upperclass cadets in integrated companies. In general, the results in Table 17 are consistent with the correlations in the four subgroups. In the discussion below, particularly strong relationships will be described, especially if they are much stronger in one subgroup than another. Among plebes in segregated units, the more frequent the dating, the more they believed that "it is OK for males and females to date each other, as long as they are not in the same unit" ($r = -.24$, $p .001$). No such relation was found among plebes in integrated units. Among upperclassmen, this belief in the legitimacy of exogenous dating was associated with attendance at basketball games, and membership in integrated clubs, but only for segregated companies. Changes in negative feelings toward the admission of women correlated significantly with all three indicators of voluntary contact in all four subgroups, with only one exception. The correlation between dating and the belief that "discipline is poorer in coeducational units," was significant for plebes in integrated units ($r = .28^{***}$) and in segregated units ($r = .26^{***}$). This indicates that the more frequently a male plebe dated females in his class, the less likely he was to believe that discipline was poorer in a coeducational unit. Attendance at women's basketball games correlated most strongly with male attitudes among the upperclassmen in integrated companies. The more basketball games an upperclassman in an integrated company attended, the more nontraditional his attitude to women in the Army ($r = .21^{***}$), the less rigid in Equality ($r = .17^{***}$), the less his feelings toward women's admission changed negatively, and the more he thought male cadets benefited from female cadets at USMA ($r = -.20^{***}$).

For plebes, "dating" was most strongly associated with attitudes, among the three measures of voluntary contact. For upperclassmen, whose dating behavior was not measured, attendance at women's basketball games was a better predictor than membership in extracurricular clubs with women. In general, voluntary contact did have a significant effect on some dimensions of male attitude, holding constant class year and degree of involuntary contact. These results are consistent with Amir's theory.

Company Climate Effects

The preceding analysis has shown that involuntary contact with women in some regiments leads to a reduction in male cadet feelings of hostility to the admission of women cadets. In other regiments, the opposite effect occurs--contact increases anti-female attitudes. However, regardless of the nature of the involuntary contact, voluntary contact with women in such activities as attendance at women's basketball games, in extracurricular clubs with female members, or dating has a positive effect on male attitude. Clearly, there is something about the psychological climate of each regiment which modifies the effect of contact on male attitudes. This research was not designed to examine the causes of differences among regiments. A separate research project is needed to identify the extent to which differences between regiments are due to the philosophies of the tactical officers in charge, to physical factors in the barracks, and to the characteristics of the cadets who are assigned to the regiments. Nevertheless, it may be useful to identify certain psychological dimensions which reliably differ among regiments, and among the companies within regiments. This section will report the results of several analyses of differences in psychological climate of the companies within the regiments.

A previous table showed that regiments differed significantly in attendance at women's basketball games (Table 9). It was the only variable, among the ones considered (see Table 1), which showed a significant effect of regiment directly, when other factors were controlled statistically by the ANOVA procedure. It is possible that the highly selective procedures used to generate Table 1 overlooked some potential differences among companies.

For all men, a series of analyses were conducted to determine whether or not companies differed in attitudes toward women, holding constant the degree of contact. For each variable, one analysis of variance compared the attitudes of 12 companies with women; and a second ANOVA compared the attitude of the 24 companies with no women. Using the procedure, it was determined that the companies with women differed significantly in attitudes toward women in the Army ($F=3.16^{***}$). To a lesser degree, companies without women also differed significantly ($F=1.72^*$). Since regimental differences were not significant on this variable, it is evident that the companies themselves were the main focus of negative attitudes to women. Companies also differed significantly in feelings about the admission of women to West Point, both among the integrated companies ($F=2.00^*$), and among the segregated companies ($F=2.8^{***}$). Among the integrated companies, there were some companies where the men perceived significantly more discriminatory treatment due to sex ("victimization"), in comparison to men in other integrated companies ($F=2.43^*$). Among the segregated companies, the perceived level of discrimination against males was fairly uniform ($F=1.05$, not significant). Beliefs about preferred speed of integration (VAR A15) were fairly uniform among the integrated companies. Among the segregated companies, however, some companies preferred a much slower pace than others ($F=1.98^{***}$). Among integrated companies, satisfaction with parades and ceremonies was uniform. Among segregated companies, however, some companies were significantly more dissatisfied than others ($F=1.67^*$). The largest between-company variance ratio was found for item 62B, satisfaction with "relations with my tactical officer," both for integrated companies ($F=6.14^{***}$) and for segregated companies ($F=7.52^{***}$). Such a clear differentiation between companies was to be expected, since companies clearly differ on the particular officer assigned to them. Attendance at basketball games was significantly different between companies ($F=2.25^{***}$). The reader may recall that there were also regimental differences in attendance at women's basketball. Thus, between-company differences may simply reflect regimental differences. Among integrated companies, there were significant differences in agreement that "the activities of married women are best confined to home and family" ($F=2.26^*$). In contrast, among the segregated companies there was a fairly uniform opinion on this item.

In summary, there were a number of scales on which companies differed significantly in attitude climate. In some instances, between-company differences reflect regimental differences; in other instances, they do not. While this section raises a number of questions about the cause of between-company differences, it clearly supports the assumptions made previously in the analysis of the contact effect; namely, some companies (and regiments) were more favorable to women's admission and to nontraditional roles for women than other companies. Some companies were more favorable to women, even holding constant the degree of involuntary contact. Contact with women does affect attitudes toward them, but other variables, such as group atmosphere, also play an important role.

Discussion and General Conclusions

It is concluded that involuntary contact with women during the academic year was not uniformly more positive in its effect than a similar kind of contact during Summer Training. This report has documented that assigning women to companies had an extremely complex effect--in some regiments, men with women in their companies were more traditional in their sex-role beliefs than men in segregated companies; in other regiments, the opposite occurred. On one dimension of attitude, men in integrated companies tended to have apparently more favorable attitudes, throughout the Corps, than men in segregated companies; that is, they preferred integrating the whole Corps next year, rather than not integrating. Voluntary contacts initiated by male cadets in attendance at women's basketball

¹It would, of course, be unfair to base any administrative action on results from one item. More items would have to be used for a reliable measure. Clearly, some tactical officers are better liked than others, but we have no data on whether or not such men are liked for the wrong reasons or for the right reasons.

games, participating in extracurricular clubs with women, and dating, were associated with more favorable, nontraditional male attitudes. The latter finding is consistent with Amir's theory--contact under generally relaxed, voluntary, and pleasant conditions does lead to lower prejudice.

In the future, when the Army assigns women to previously all-male units, it can be expected that company climate will have a significant impact on how well the women are accepted. It is hoped that Army leaders will learn through future research how to influence company climate so that uniformly positive effects of contact result. At the present time, too much depends on the skill of the individual company leader. More research is needed to clarify the sources of variation in company climate.

One practical implication of these results should be underlined: voluntary contacts between men and women cadets should be encouraged as a means of promoting favorable attitudes. Involuntary contacts are unavoidable, but less effective in shaping attitudes, except under the highly controlled circumstances stated by Amir's theory.

TABLE 1
SUMMARY OF MAIN EFFECTS IN THE ANALYSIS

| Variable | Chi Square | F-Ratios | | | |
|-------------------|------------|------------------------|-----------------------|--------------------------|--|
| | | Main Effect Contact | Interactions | | |
| | | | Contact x Class | Contact x Regiment | Contact x Class x Regiment |
| ARIAW | 19.83* | 0.9 | 1.3 | 1.7 | 0.8 |
| ACOHES | 26.22*** | 3.8* | 0.4 | 2.6* | 0.9 |
| BSATIS | 18.19* | 1.4 | 0.2 | 1.6 | 1.3 |
| FEMVAL | 15.53* | 0.3 | 0.1 | 0.7 | 0.9 |
| A 14 ^a | 24.73*** | 2.0 | 6.4* | 0.5 | 0.9 |
| A 15 ^a | 44.42*** | 4.9* | 1.0 | 0.7 | 1.4 |
| A 24 ^a | 18.79* | 1.1 | 0.3 | 1.9 | 0.3 |
| 64 ^a | 18.40* | 2.7 | 0.7 | 1.3 | 2.3 |
| B 68 ^a | 27.98*** | 0.0 | 0.2 | 0.4 | 3.4* |

^aSee Appendix 1 for the content of these single-item scales.

*p < .05.
**p < .01.
***p < .001.

TABLE 2
PERCEIVED COMPANY COHESIVENESS
(ACOHES)

| <u>Regiment</u> | <u>Class</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|----------------|----------------|-------------------|----------|
| 1 | P ^a | 18.11 | 19.81 | 2.61* |
| | U ^b | 17.39 | 18.53 | 1.94 |
| 2 | P | 18.40 | 19.80 | 1.85 |
| | U | 18.78 | 18.66 | -.23 |
| 3 | P | 18.53 | 19.82 | 1.84 |
| | U | 17.13 | 18.58 | 2.32* |
| 4 | P | 18.81 | 18.40 | -1.63 |
| | U | 19.96 | 17.92 | -0.86 |

Chi Square = 26.22***

TABLE 3
LEAST SQUARES ANALYSIS OF VARIANCE

| | <u>df</u> | <u>MS</u> | <u>F</u> |
|-----------------------|-----------|-----------|----------|
| Main Effects | 5 | 50.72 | 3.65** |
| Contact | 1 | 53.33 | 3.84* |
| Regiment | 3 | 13.11 | .94 |
| Class | 1 | 85.47 | 6.15** |
| Two-way Interactions | 7 | 12.98 | 1.73 |
| Contact x Regiment | 3 | 35.87 | 2.58* |
| Contact x Class | 1 | 5.49 | .40 |
| Class x Regiment | 3 | 1.53 | .11 |
| Three-way Interaction | 3 | 12.69 | .91 |
| Residual | 1174 | 13.89 | |

*p < .05.
**p < .01.
***p < .001.

^aClass of 1980.

^bClasses of 1978 and 1979 combined.

TABLE 4

EFFECT OF CONTACT WITH WOMEN ON MALE ATTITUDES TOWARD WOMEN IN THE ARMY
CONTROLLING FOR CLASS AND REGIMENT (ARIAW)

| <u>Regiment</u> | <u>Class</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|--------------|----------------|-------------------|----------|
| 1 | Plebe | -2.63 | -2.40 | .81 |
| | Upper | -2.49 | -2.72 | -1.11 |
| 2 | Plebe | -1.91 | -.246 | -1.52 |
| | Upper | -2.22 | -2.58 | -1.75 |
| 3 | Plebe | -3.05 | -2.18 | 3.03** |
| | Upper | -2.77 | -2.49 | 1.20 |
| 4 | Plebe | -2.09 | -2.02 | .21 |
| | Upper | -2.22 | -2.57 | -1.38 |

Chi Square = 19.83*

NOTE: Each mean is based on at least 61 cases; a least squares analysis of variance shows a significant overall variation among the 16 cell means, but did not locate significant main effects or interactions.

TABLE 5

SELF-REPORTED CHANGE, OVER THE LAST FIVE MONTHS, IN ATTITUDE
TOWARD THE ADMISSION OF WOMEN TO WEST POINT^a (A 14)

| <u>Regiment</u> | <u>Class</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|--------------|----------------|-------------------|----------|
| 1 | 1980 | 2.57 | 2.26 | -2.43** |
| | 1979 & 1978 | 2.30 | 2.46 | 1.54 |
| 2 | 1980 | 2.10 | 2.20 | .59 |
| | 1979 & 1978 | 2.30 | 2.51 | 2.01* |
| 3 | 1980 | 2.54 | 2.12 | -2.83** |
| | 1979 & 1978 | 2.34 | 2.39 | .47 |
| 4 | 1980 | 2.13 | 2.25 | .66 |
| | 1979 & 1978 | 2.18 | 2.41 | 1.96* |

*p < .05.

**p < .01.

***p < .001.

^a1 = more favorable; 2 = no change; 3 = less favorable.

TABLE 6

ANALYSIS OF VARIANCE OF SELF-REPORTED CHANGES IN
FAVORABILITY TO WOMEN AT WEST POINT

| | <u>df</u> | <u>MS</u> | <u>F</u> |
|-----------------------|-----------|-----------|----------|
| Main Effects | 5 | .89 | 1.68 |
| Contact | 1 | 1.06 | 1.98 |
| Regiment | 3 | .40 | .75 |
| Class | 1 | 2.00 | 3.74* |
| Two-way Interactions | 7 | 1.15 | 2.15** |
| Contact x Regiment | 3 | .27 | .50 |
| Contact x Class | 1 | 3.44 | 6.42** |
| Class x Regiment | 3 | .15 | .28 |
| Three-way Interaction | 3 | .48 | .90 |
| Explained | 15 | 1.75 | 3.27 |
| Residual | 1220 | .54 | |

NOTE: Naturally, in all of these tables, the variance among all 16 groups ("Explained" with 15 degrees of freedom) is significant, since only variables with significant chi squares were selected for analysis by this procedure.

*p < .05.
**p < .01.
***p < .001.

TABLE 7
EFFECT OF COMPANY-LEVEL CONTACT WITH WOMEN, CLASS AND REGIMENTAL
ATMOSPHERE ON SPEED OF COMPANY-LEVEL INTEGRATION ITEM (15 A)

| <u>Regiment</u> | <u>Class</u> | <u>Contact (Integrated)</u> | <u>No Contact (Segregated)</u> | <u>t</u> |
|-----------------|--------------|---------------------------------|------------------------------------|----------|
| 1 | Plebe | 1.28 | 1.75 | 3.42*** |
| | Upper | 1.43 | 1.72 | 2.42** |
| 2 | Plebe | 1.38 | 1.49 | .75 |
| | Upper | 1.42 | 1.64 | 1.81 |
| 3 | Plebe | 1.26 | 1.70 | 3.30*** |
| | Upper | 1.43 | 1.54 | .82 |
| 4 | Plebe | 1.28 | 1.46 | 1.34 |
| | Upper | 1.29 | 1.63 | 3.11** |

NOTE: The question was: "Next year, if possible, women cadets should be assigned to: (1) All 36 companies; (2) Up to 24 companies; or (3) The same 12 companies as at present."

In a least squares analysis of variance, only contact has a significant main effect; Class and Regiment by themselves or in interaction with Contact do not affect the response.

*p < .05.
**p < .01.
***p < .001.

TABLE 8

BELIEF THAT SEXUAL ATTRACTION BETWEEN MALE AND FEMALE CADETS INTERFERES WITH
FUNCTIONING OF THE CADET CHAIN-OF-COMMAND (A24)^a

| <u>Regiment</u> | <u>Class</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|--------------|----------------|-------------------|----------|
| 1 | Plebe | 2.25 | 2.23 | -.10 |
| | Upper | 2.08 | 1.88 | -1.05 |
| 2 | Plebe | 2.50 | 2.57 | .24 |
| | Upper | 2.32 | 2.21 | -.56 |
| 3 | Plebe | 1.71 | 2.25 | 2.36* |
| | Upper | 2.17 | 2.23 | .34 |
| 4 | Plebe | 2.72 | 2.19 | -1.90 |
| | Upper | 2.62 | 2.03 | -2.83** |

^aLower scores indicate agreement; higher scores disagreement.

*p < .05.

**p < .01.

NOTE: The ANOVA shows a significant effect of Class on the response (F=4.1*).

TABLE 9

HOW OFTEN THE CADET ATTENDED THE WOMEN'S BASKETBALL GAMES (64)

| <u>Regiment</u> | <u>Class</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|--------------|----------------|-------------------|----------|
| 1 | Plebe | 1.76 | 2.06 | 2.67** |
| | Upper | 1.90 | 2.07 | 1.64 |
| 2 | Plebe | 2.30 | 1.95 | -2.12* |
| | Upper | 1.79 | 1.74 | -.50 |
| 3 | Plebe | 1.79 | 1.92 | 1.00 |
| | Upper | 1.96 | 1.86 | -.96 |
| 4 | Plebe | 2.08 | 1.91 | -1.32 |
| | Upper | 1.99 | 2.04 | 0.41 |

*p < .05.

**p < .01.

NOTES: Higher scores indicate more frequent attendance.

The ANOVA showed a significant main effect of regiment (F=6.6**); the two-way interactions as a set were significant (F=2.0*).

TABLE 10

HOW OFTEN THE CADET, AS A FOURTH CLASSMAN, WAS RECOGNIZED
BY UPPERCLASSMEN PRIOR TO GRADUATION (B 68)

| <u>Regiment</u> | <u>Class</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|--------------|----------------|-------------------|----------|
| 1 | Plebe | 3.00 | 2.88 | -.61 |
| | Upper | 2.70 | 2.68 | -.10 |
| 2 | Plebe | 2.33 | 3.00 | 4.23*** |
| | Upper | 2.62 | 2.39 | -1.29 |
| 3 | Plebe | 2.45 | 2.84 | 2.18* |
| | Upper | 2.55 | 2.53 | -.09 |
| 4 | Plebe | 3.07 | 2.84 | -1.21 |
| | Upper | 2.70 | 2.48 | -1.35 |

NOTES: Higher scores indicate more frequent recognition.

The ANOVA shows that the triple interaction of Contact, Regiment, and Class is significant (F=3.4*).

TABLE 11

SATISFACTION^a WITH PARADES AND CEREMONIES (B 55)

| <u>Regiment</u> | <u>Class</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|--------------|----------------|-------------------|----------|
| 1 | 1980 | 3.23 | 3.08 | -.90 |
| | 1978 & 1979 | 2.85 | 2.57 | -.208* |
| 2 | 1980 | 2.75 | 3.20 | 2.55** |
| | 1978 & 1979 | 2.81 | 2.63 | -1.27 |
| 3 | 1980 | 2.62 | 2.52 | -.53 |
| | 1978 & 1979 | 2.53 | 2.77 | 1.65 |
| 4 | 1980 | 2.29 | 2.64 | 1.94 |
| | 1978 & 1979 | 2.62 | 2.79 | 1.25 |

^a1 = very satisfied; 2 = somewhat satisfied; 3 = somewhat dissatisfied; 4 = very dissatisfied.

NOTE: In the analysis of variance, using Class, Regiment, and Contact, the main effect of contact was significant (F=3.8*0, and the interaction of Contact with Regiment (F=3.1*).

*p < .05.

**p < .01.

***p < .001.

TABLE 12

SATISFACTION WITH RELATIONS WITH MY TACTIAL OFFICER^a (B 62)

| <u>Regiment</u> | <u>Class</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|--------------|----------------|-------------------|----------|
| 1 | 1980 | 2.33 | 1.79 | -2.78** |
| | 1978 & 1979 | 2.25 | 2.10 | -1.02 |
| 2 | 1980 | 2.06 | 2.07 | .04 |
| | 1978 & 1979 | 2.33 | 2.22 | -.72 |
| 3 | 1980 | 2.67 | 1.82 | -4.83*** |
| | 1978 & 1979 | 2.46 | 2.14 | -2.01* |
| 4 | 1980 | 1.74 | 1.94 | .99 |
| | 1978 & 1979 | 1.75 | 2.19 | 3.12** |

^a1 = very satisfied; 4 = very dissatisfied.

NOTE: In the analysis of variance, there was a significant main effect of Class (F=5.6**) and a significant interaction between Contact and Regiment (F=5.15**).

TABLE 13

MEAN PSYCHOLOGICAL FEMININITY (FEMVAL) BY CONTACT, CLASS AND REGIMENT

| <u>Regiment</u> | <u>Class</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|--------------|----------------|-------------------|----------|
| 1 | Plebe | 21.58 | 22.08 | 1.02 |
| | Upper | 21.92 | 22.15 | .51 |
| 2 | Plebe | 20.71 | 22.19 | 2.56** |
| | Upper | 21.62 | 21.82 | .46 |
| 3 | Plebe | 21.40 | 21.64 | .49 |
| | Upper | 21.78 | 21.35 | -1.03 |
| 4 | Plebe | 21.05 | 22.49 | 2.33* |
| | Upper | 22.51 | 22.18 | -.86 |

NOTE: Although the explained variance among the 16 groups is significant, none of the main effects or interactions were significant, independent of the others in the ANOVA.

*p < .05.

**p < .01.

***p < .001.

TABLE 14

MALE PLEBE ATTITUDES AND CONTACT AT TWO LEVELS OF INTERGROUP CONTACT

| <u>Variable</u> | <u>Condition</u> | <u>Contact</u> | <u>No Contact</u> | <u>t</u> |
|-----------------|------------------|----------------|-------------------|----------|
| Equality | CBT ^a | 1.15 | .94 | 2.78** |
| | AY ^b | .96 | .98 | -.23 |
| Victimization | CBT | 1.90 | 1.65 | 2.81*** |
| | AY | 1.83 | 1.78 | .58 |
| Protection | CBT | 1.28 | 1.24 | .96 |
| | AY | 1.42 | 1.32 | 1.69 |
| Jealousy | CBT | 3.79 | 3.62 | 2.12** |
| | AY | 4.00 | 3.97 | .41 |

^aSquad-level Contact measures taken after CBT.

^bCompany-level Contact measures taken after seven months of the Academic Year.

TABLE 15

INTERCORRELATIONS AMONG VARIABLES SIGNIFICANTLY
AFFECTED BY INTERGROUP CONTACT

| | <u>1</u> | <u>2</u> | <u>3</u> | <u>4</u> | <u>5</u> | <u>6</u> | <u>7</u> | <u>8</u> |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1. ARIAW | | | | | | | | |
| 2. ACOHES | -.06 | | | | | | | |
| 3. BSATIS | -.04 | a | | | | | | |
| 4. FEMVAL | .05 | .16* | -.09* | | | | | |
| 5. VARA14 | -.37* | 0 | a | -.05 | | | | |
| 6. VARA15 | -.27* | .05 | a | .22* | | | | |
| 7. VARA24 | .33* | 0 | a | -.24* | -.14* | | | |
| 8. VAR64 | .13* | 0 | -.05 | .09* | -.14* | -.10* | .08 | |
| 9. VAR68 | .09 | a | .05 | .05 | a | a | a | .05 |

^aNot available, due to split sample design.

NOTE: N's vary from 2429 to 816.

*p < .001.
**p < .01.
***p < .05.

TABLE 16

MULTIVARIATE TEST OF CONTACT HYPOTHESES

| | Plebes | | | | All Cadets |
|---|-------------------|------------------|-------------------|------------------|-------------------|
| | Regiment 1 | Regiment 2 | Regiment 3 | Regiment 4 | |
| N. No Contact | 73 | 72 | 70 | 79 | 764 |
| N. Contact | 33 | 24 | 33 | 32 | 358 |
| <u>Standard Discriminant Coefficients</u> | | | | | |
| COH | -.48 ^a | - | -.33 | .47 | -.48 ^a |
| ARIAW | - | .66 ^a | -.42 ^a | -.44 | - |
| FEMVAL | - | -.48 | .22 | -.57 | - |
| VARA14 | .48 ^a | - | .42 ^a | - | - |
| VARA15 | -.66 ^a | - | -.71 ^a | -.48 | -.80 ^a |
| VARA24 | - | - | -.23 | .53 ^a | .22 |
| VAR64 | .30 | .65 ^a | - | - | - |
| Multivariate F | 6.36*** | 4.28** | 3.87** | 2.88* | 10.49*** |

NOTE: The N's in each column are the number of Corps with complete data on all variables.

^aEntry of this variable adds significantly to the discriminatory power of the discriminant function, as measured by a statistically significant (.05) change in RAO's V.

- This variable did not enter the model for this group.

*p < .05.
**p < .01.
***p < .001.

TABLE 17

SELECTED CORRELATIONS BETWEEN VOLUNTARY CONTACT
AND ATTITUDES TOWARD WOMEN

| | Voluntary Contact in | | | Amir's Theory Confirmed |
|---|--------------------------|-------------------------------|---------------------|-------------------------------|
| | Basketball Attendance | Extracur- ricular Clubs | Dating Classmate | |
| ARIAW | .13 | .14 | .06 | y |
| EQUALITY | -.07 | -.06 | -.01 ^a | y |
| 13 - Feelings about admission of women. | -.18 | -.14 | -.06 | y |
| A14 - Change in feelings to women, five months. | -.14 | -.07 | -.01 ^a | y |
| 17 - Protection. | .06 | .10 | .07 | ? |
| A19 - Attendance in classes. | .08 | .07 | -.15 | ? |
| A24 - Sex attraction, Chain-of- Command. | .08 | .07 | .07 ^a | y |
| A29 - Married women best at home. | .01 | .10 | .06 ^a | y |
| A30 - Dates OK in different units. | -.10 | -.07 | -.05 ^a | y |
| B24 - M & F should avoid liaisons. | .16 | .06 | .07 ^a | ? |
| B25 - Given training, female officer can handle emergency. | -.13 | -.10 | .00 ^a | y |
| B27 - Males benefit from females at USMA. | -.14 | -.10 | -.10 | y |
| B29 - Woman can be soldier & feminine. | -.14 | -.10 | -.10 | y |
| A60 - No women in wartime infantry. | .08 | .08 | -.01 ^a | y |
| A61 - Discipline in coed units. | .09 | .02 ^a | .22 | y |
| A62 - Sex discrimination here to stay. | .07 | .08 | -.03 ^a | y |
| 67 - Socialize with upper class. | .04 ^a | .05 | .19 | ? |
| ACOHES | .00 ^a | .06 | -.12 | ? |
| BSATIS | -.05 ^a | -.07 | -.09 | y |

^aNot significant.

*p < .001.

**p < .01.

***p < .05.

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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report shows how contact between men and women cadets at West Point affected the attitudes of the men toward women's roles in society and women at West Point specifically. An earlier report showed that contact with women during the first summer training tended to result in relatively negative attitudes among plebes in the same squad. This study focuses on the effects of interaction during the first Academic Year of women at West Point, both among plebes and among upperclass males, in integrated and segregated companies. For involuntary contact, resulting from assignment to an integrated company, the results were complex, depending on the class year of the cadet, his particular regiment, and the attitude variable being considered. Such contact between the sexes was not effective in reducing prejudice, although there were exceptions for some regiments. For voluntary contacts, such as attending women's basketball games, belonging to extracurricular clubs with women, or dating, the more contact a male had, the more positive his attitude. The results are generally consistent with Amir's theory of intergroup contact as a means of reducing prejudice, but West Point has much to learn about the sources of company-level and regimental climate. | | |

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