
Does Enlistment Propensity Predict Accession? High School Seniors' Plans and Subsequent Behavior

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The United States ended military conscription in 1973 and undertook, for the first time, the task of maintaining a large peacetime force based on voluntary enlistment. The nation implicitly substituted a marketplace philosophy of military manpower for previously accepted notions of citizenship obligations.¹ Thus, the military services compete in a labor market with other employers, colleges, and universities for desirable young workers. Cognitive aptitude is one of the primary dimensions of person-

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nel desirability; graduation from high school and desire to enter college are clear indicators of such aptitude.

As a consequence of entering this competitive labor marketplace, the Department of Defense and the individual services initiated large-scale programs of market research aimed at monitoring the quantity and quality of personnel in the civilian labor force who might be available for voluntary military service. One element of this research program has been microdata analysis based upon large-scale longitudinal surveys of youth.²

This article explores one such survey program, the University of Michigan's *Monitoring the Future* (MtF) project. MtF has been surveying high school seniors since 1975 and tracking their subsequent life-course trajectories up to the age of thirty-five. We use a portion of these data to address three interrelated questions:

1. What is the relationship between high school seniors' plans or "propensity" to enlist in the armed forces and their actual enlistment behaviors during the first five or six years after high school—the time interval within which entrance into military service (or college) is most likely to occur? Like any market research, the measurement of propensity is useful primarily as a predictor of market behavior. If people who say they will join the military do not enlist, the utility of propensity data for personnel management is limited. We are particularly interested in whether the relationship between propensity and enlistment differs between males and females. The armed forces have traditionally recruited within the male labor market, but the transition from conscription to voluntarism has frequently resulted in an expansion of women's military service. While the military is still predominantly male, the female labor force has great potential for further market expansion.³
2. How does the relationship between military propensity and enlistment compare with the relationship between college plans and actual college attendance? Specifically, do the military plans of high school seniors predict enlistment as well as their college plans predict college entrance? We note the competition between the armed forces and institutions of higher education for many of the same high-cognitive-aptitude youth. The military uses educational incentives to motivate some of these young people to defer college matriculation until after military service and links commissioning as an officer in the armed forces to receipt of a college degree, leading officer candidates to defer military service until after college graduation.

3. As we have moved further into the all-volunteer force era, and as the cost of college has increased, have there been changes in the associations between expectations and outcomes for military service, and for college attendance?

This analysis of the propensity-enlistment relationship among the MtF samples is of particular relevance to those concerned with military recruitment because military planners have relied heavily on the Youth Attitude Tracking Study (YATS) as an indicator of propensity. A recent analysis of YATS shows a positive correlation between propensity to enlist in the military and actual enlistment behavior,⁴ but also shows a lower level of enlistment among high-propensity youth than our analyses reveal. There are several possible sources for the differences between findings from the YATS samples and the MtF samples, which we will explore after we present our findings; however, the MtF sample is drawn from a population, seniors on the verge of graduation, that is particularly relevant for military planners seeking youth volunteers of appropriate cognitive ability.

The Several Meanings of “Military Propensity”

The word “propensity” has a number of synonyms, including “tendency,” “inclination,” and “disposition.” However, common usage of the term “military propensity” (or “enlistment propensity”) often broadens the meaning of the word to include not only individuals’ interests and desires, but also their plans and expectations, with respect to military service.⁵ Thus, the term is used to cover a fairly broad range of meanings; indeed, it may be helpful to consider a whole range of “propensities,” extending from wishes, or preferences, to firm plans.

Where would the “propensities” of high school seniors be located in such a range? By the time they reach the end of high school, most young people have had ample opportunity to consider alternatives seriously and have explored their options in some detail. Indeed, before graduation many have been accepted into one or more colleges, and others have made at least preliminary arrangements with military recruiters. So the plans or expectations that individuals report just before high school graduation often reflect mutual commitments firmly in place, and these firm propensities should correlate quite well with future behaviors, whereas expressions of propensity some months or years earlier may yield less accurate predictions.

Methods

Study Design

Monitoring the Future is an ongoing study of secondary school students conducted by the Institute for Social Research at the University of Michigan. The study design has been extensively described elsewhere.⁶ Here we outline only the key features. MtF employs a cohort-sequential research design that involves (1) annual surveys of nationally representative samples of high school seniors, beginning in 1975,⁷ and (2) annual follow-up surveys mailed each year to subsamples from each class sample in the years following graduation.⁸

Measures

In each form of the senior year questionnaire, respondents are asked a series of questions about their plans after high school. One question is, "How likely is it that you will do each of the following things after high school?" "Serve in the armed forces" and "Graduate from college (four-year program)" are two of the activities listed, and all respondents are asked to choose from the following alternatives: "Definitely won't," "Probably won't," and "Definitely will." Analogously, in the follow-up questionnaire, respondents are asked "Now we'd like to know about some things you are doing now, or have done, or plan to do. Please look at each activity listed below, and mark the circle which shows how likely you are to do each." "Serve on active duty in the armed forces," "Attend a four-year college," and "Graduate from a four-year college program" are three of the activities listed, and all respondents are asked to choose from the following alternatives: "I'm doing this now," "I have done this," "Definitely won't," "Probably won't," "Probably will," and "Definitely will." Additionally we ask all follow-up respondents, "What is the highest degree you have earned?" and follow that question with a list of degrees.

Samples

The data used in this manuscript come from 33,241 (weighted) cases from the classes of 1976–1991 who provided a response to the propensity measure during the senior year data collection. Follow-up questionnaires were sent to these seniors from 1977 through 1995.⁹

Data reported here from follow-up collections were adjusted for panel

nonresponse. Response rates for follow-ups ranged from 83 percent for follow-up 1 respondents (one to two years after high school) to between 60 percent and 75 percent for follow-up 3 respondents (five to six years after high school). The highest-propensity seniors (those who said that they “Definitely Will” enter the armed forces) responded at a much lower rate than those of lower propensity. For the classes of 1976 through 1991, 62 percent of the seniors with the highest propensity returned the follow-up 1 questionnaire, compared to 79 percent of their lower propensity classmates. In follow-up 2, the corresponding figures were 58 percent and 75 percent. The differential is not surprising because accession into the military increases the normal difficulties of tracking panel members into subsequent follow-ups. Because of this, we concluded that rates of accession would be underestimated if adjustments for differential panel attrition were not made. We therefore opted to impute data for individuals who did not respond to the follow-ups. Imputation, combined with weighting for differential selection probabilities, yielded a total of 33,241 cases for analysis.¹⁰

In addition to examining the three questions posed above, we were interested in looking at changes in enlistment behavior over time. Because there was a fair amount of fluctuation in both propensity and actual accession from year to year, we initially combined data from four adjacent class years into four pools: 1976–1979, 1980–1983, 1984–1987, and 1988–1991. Later, we decided that grouping the data into two eight-year pools (1976–1983 and 1984–1991) captured most of the significant changes. In the present report, we focus primarily on the latter group, respondents from the classes of 1984 to 1991.¹¹

Results

Relationships between Propensity and Military Enlistment

Table 1 and Figure 1 display the enlistment propensities of male and female high school seniors from the classes of 1984–1991 and how these propensities are related to actual accession into the armed forces during the first five or six years after high school graduation. Beginning with the data on propensity, shown in the left-hand column of Table 1 (and displayed also as the width of the bars in Figure 1), we observe that nearly one-quarter of the young men expected that they would either “definitely” (12 percent) or “probably” (12 percent) serve; just over one-quarter (28 percent) thought they “probably” would not; and the remaining half (48

Table 1

Accession into the Armed Forces in the First Five or Six Years after High School by Senior Year Military Propensity: Cumulative Proportions by Sex, Class Years 1984 through 1991 Combined¹

Adj. Weighted <i>N</i>		Cumulative Proportion who Enlisted		
		1–2 years after HS	3–4 years after HS	5–6 years after HS
MALES				
Definitely won't	4063 (48.36%)	0.028 (1.35%)	0.048 (2.32%)	0.057 (2.76%)
Probably won't	2342 (27.87%)	0.052 (1.45%)	0.081 (2.26%)	0.097 (2.70%)
Probably will	1011 (12.03%)	0.207 (2.49%)	0.274 (3.30%)	0.297 (3.57%)
Definitely will	986 (11.73%)	0.617 (7.24%)	0.678 (7.95%)	0.699 (8.20%)
Total Adj. Wtd. <i>N</i>	8402 (100%)	1053 (12.53%)	1330 (15.83%)	1448 (17.23%)
Adj. Weighted <i>N</i>		Cumulative Proportion who Enlisted		
		1–2 years after HS	3–4 years after HS	5–6 years after HS
FEMALES				
Definitely won't	7433 (79.56%)	0.008 (0.64%)	0.015 (1.19%)	0.018 (1.43%)
Probably won't	1245 (13.32%)	0.030 (0.40%)	0.046 (0.61%)	0.057 (0.76%)
Probably will	434 (4.64%)	0.056 (0.26%)	0.076 (0.35%)	0.079 (0.37%)
Definitely will	231 (2.48%)	0.373 (0.93%)	0.399 (0.99%)	0.404 (1.00%)
Total Adj. Wtd. <i>N</i>	9343 (100%)	208 (2.22%)	294 (3.15%)	333 (3.56%)

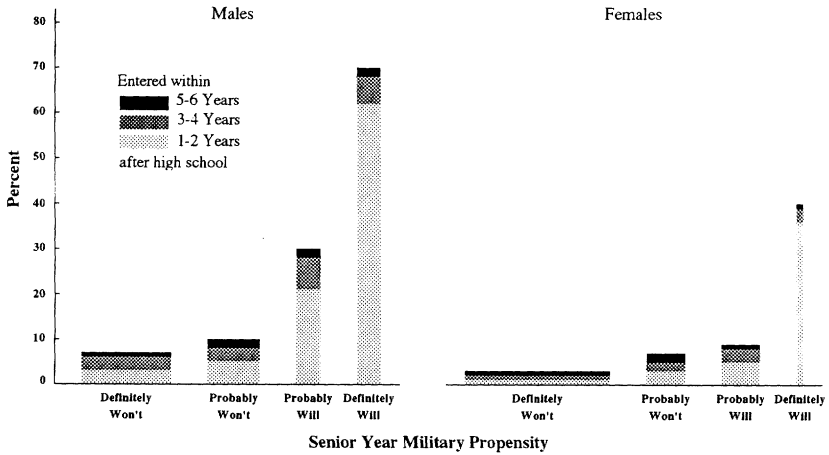
Notes: ¹ Percentage of total adjusted weighted *N* shown in parentheses.

percent) thought they “definitely” would not. Among the young women, the proportions who expected to serve were a great deal lower, with only 2.5 percent “definite” and 4.6 percent “probable.”

For each level of enlistment propensity, the rates of actual enlistment are shown in the right-hand portion of Table 1 (and indicated also by the bar heights in Figure 1). Shown separately are the proportions who had

Figure 1

Military Accession by Senior Year Military Propensity, 1984–1991 Combined¹



Notes: ¹ Bar width proportionate to size of senior year propensity subgroup.

entered the service by the time of the first follow-up (one or two years after high school), the second follow-up (three or four years after high school), and the third follow-up (five or six years after high school). It should be noted that once an individual reported military service, we employed a cumulative coding approach that continued to treat that individual as having served even if the individual failed to participate in later follow-ups or reported no longer being in the armed forces.

We begin our inspection of the propensity-enlistment relationships with three broad observations based on Table 1 and Figure 1. First, expectations late in the senior year of high school were strongly predictive of actual entrance into military service. Second, the majority of enlistments occurred within the first year or two after high school; but even in the fifth and sixth years there were some further accessions. Third, even after taking account of the large gender differences in propensity, there remain large gender differences in rates of enlistment; at each level of propensity, females were roughly half as likely as males actually to enlist. Thus we report findings for males and females separately.

Males. Among young men who late in their senior year expected

“definitely” to serve in the armed forces, 61 percent had done so within a year or two, and by five or six years after high school, the total had reached 70 percent. Accession was less than half as likely among those who expected “probably” to serve, beginning at 20 percent by the first follow-up and reaching 29 percent by the third. Among the large majority of young men who had not expected to serve, accession rates were very low; however, it is of interest to note that among those men who “definitely” expected not to serve, the majority of all accession occurred after the first follow-up—perhaps after many of them had tried college.

What proportion of total male enlistment consisted of those who as high school seniors expected to serve? The answer can be seen in Figure 1, and also can be derived from the “percentages of total samples” data shown in parentheses in Table 1. At the time of the first follow-up, more than three quarters of all male enlistees were drawn from the ranks of those who expected to serve $([2.49 + 7.24] \div 12.53)$, and more than half from those who expected “definitely” to serve $(7.24 \div 12.53)$. By the third follow-up these proportions had declined only slightly (to about two-thirds and just under one-half, respectively). It is sometimes suggested that low-propensity individuals account for a near majority of all accessions, simply because there are so many more low-propensity than high-propensity individuals.¹² The present results, based on the very firm propensity data available at the end of high school, indicate that this is not the case among young men in recent years.

Females. Among young women who “definitely” expected to serve, 37 percent had done so by the first follow-up, and that proportion rose only to 40 percent by the third. Accession rates were dramatically lower among those who only “probably” expected to serve, starting at 5 percent and rising to 8 percent. Rates were even lower among those who expected not to serve. Nevertheless, and in contrast to the findings for men noted above, among women the majority of all accessions consisted of those who in high school expected that they would not serve.

Contrasts with College Expectations and Outcomes

Table 2 and Figure 2 display college plans, and their relationship with actual college entrance. Here again we observe that expectations at the end of high school were strongly predictive of post-high school behaviors, and among those in the “definitely will” categories entrance occurred within the first year or two after high school. In other important ways, however, the patterns for college contrast sharply with those for military service, as can be seen most clearly by comparing Figures 1 and 2.

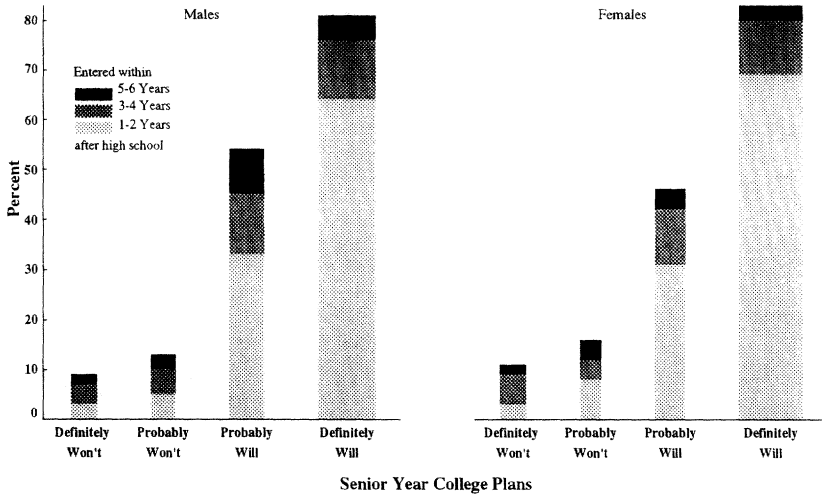
Table 2
Entry into College over the First Five or Six Years after High School by Senior Year Military Propensity: Cumulative Proportions by Sex, Class Years 1984 through 1991 Combined¹

	Adj. Weighted <i>N</i>	Cumulative Proportion who Entered College			Proportion who earned at least a Bachelor's Degree by 5-6 years after high school
		1-2 years after HS	3-4 years after HS	5-6 years after HS	
MALES					
Definitely won't	1552 (17.52%)	0.030 (0.53%)	0.061 (1.06%)	0.079 (1.38%)	0.02 (0.39%)
Probably won't	1493 (16.85%)	0.049 (0.82%)	0.089 (1.50%)	0.124 (2.09%)	0.033 (0.55%)
Probably will	2169 (24.48%)	0.322 (7.88%)	0.441 (10.80%)	0.529 (12.94%)	0.204 (5.01%)
Definitely will	3646 (41.15%)	0.633 (26.05%)	0.753 (30.98%)	0.802 (32.99%)	0.425 (17.5%)
Total Adj. Wtd. <i>N</i>	8860 (100%)	3126 (35.28%)	3928 (44.34%)	4377 (49.41%)	2078 (23.46%)
	Adj. Weighted <i>N</i>	Cumulative Proportion who Entered College			Proportion who earned at least a Bachelor's Degree by 5-6 years after high school
FEMALES					
Definitely won't	1777 (18.25%)	0.026 (0.47%)	0.075 (1.36%)	0.098 (1.80%)	0.015 (0.27%)
Probably won't	1395 (14.32%)	0.068 (0.98%)	0.109 (1.57%)	0.154 (2.20%)	0.023 (0.33%)
Probably will	2082 (21.39%)	0.290 (6.21%)	0.409 (8.75%)	0.452 (9.67%)	0.209 (4.48%)
Definitely will	4482 (46.03%)	0.668 (30.74%)	0.795 (36.59%)	0.832 (38.30%)	0.481 (22.13%)
Total Adj. Wtd. <i>N</i>	9736 (100%)	3738 (38.39%)	4702 (48.30%)	5060 (51.97%)	2649 (27.21%)

Notes: ¹ Percentage of total adjusted weighted *N* shown in parentheses.

Figure 2

College Entry by Senior Year College Plans, 1984–1991 Combined¹



Notes: ¹ Bar width proportionate to size of senior year propensity sub-group.

The first contrast we note is the most dramatic: the proportions who planned to complete a four-year college program, as well as the proportions who actually entered college, are a great deal larger than the corresponding proportions for military service. Second, whereas there were very large gender differences in military plans and outcomes, the college data are quite similar for young men and women in terms of (1) proportions who expected to complete a four-year degree (over 20 percent “probably” and over 40 percent “definitely”), (2) proportions who actually entered college (about half of all, and 80 percent of the “definitely” sub-group), and (3) proportions who actually completed a four-year degree by five or six years after high school (among females, over one-quarter of all, and nearly half of the “definitely” subgroup; among males, these proportions were slightly lower). Third, the overwhelming majorities of those who *entered* college (about 92 percent) and those who *graduated* (about 97 percent) had, as high school seniors, expected (“probably” or “definitely”) to complete college (derived from Table 2); however, among those who entered military service, just two-thirds (68 percent) of males

Table 3

Accession into the Armed Forces by Senior Year Intention to Join the Military: Measures of Association One to Six Years after High School

	Class Years 1976–1983 Combined		Class Years 1984–1991 Combined	
	Males	Females	Males	Females
1–2 Years Pearson Correlation	0.430	0.304	0.507	0.307
Eta	0.512	0.432	0.568	0.390
3–4 Years Pearson Correlation	0.420	0.297	0.503	0.286
Eta	0.483	0.404	0.553	0.350
5–6 Years Pearson Correlation	0.433	0.268	0.500	0.276
Eta	0.485	0.353	0.545	0.331

Entry into College by Senior Year Intention to Graduate from a Four-year College: Measures of Association One to Six Years after High School

	Class Years 1976–1983 Combined		Class Years 1984–1991 Combined	
	Males	Females	Males	Females
1–2 Years Pearson Correlation	0.586	0.589	0.519	0.547
Eta	0.587	0.604	0.539	0.569
3–4 Years Pearson Correlation	0.621	0.636	0.547	0.600
Eta	0.636	0.647	0.591	0.621
5–6 Years Pearson Correlation	0.631	0.638	0.594	0.607
Eta	0.645	0.645	0.608	0.625

and only one-third (35 percent) of females had, as seniors, expected to do so (derived from Table 1).

Changes in Expectation-Outcome Correlations

Table 3 displays measures of association between expectations and outcomes for military service and for college attendance, contrasting the graduating classes of 1984–91 with the classes of 1976–83. In addition to the familiar Pearson product-moment correlation, the table displays the eta for each of the relationships.¹³

Military Enlistment. Focusing first on the military propensity-enlistment data from the classes of 1984–91 (upper right-hand portion of Table 3), we see that the correlations for females are distinctly lower than those for males. We also see that the correlations cumulated across five to six years are no higher than those based on the first year or two; indeed, among females, the correlations cumulated across the longer time interval are actually lower, indicating a slightly poorer fit between plans and outcomes. These results are fully consistent with the data shown in Table 1 and Figure 1, which indicate that the later accessions among females are drawn primarily from among those who expected not to serve.

Next we consider whether the propensity-enlistment correlations have shifted across time, by contrasting the classes of 1976–83 (upper left-hand portion of Table 3) with the classes of 1984–91 (right-hand portion). Among males, the correlations are consistently stronger for the later time interval, indicating that in recent years young men's enlistment behaviors have become more closely linked with their plans and expectations at the end of high school. Among females, on the other hand, the differences across time are small and generally in the opposite direction.

College Entrance. The correlations between college plans and entrance (shown in the lower portion of Table 3) are high, although the comparison of the two time intervals indicates that the matches between plans and outcomes were not quite as close for the more recent graduating classes (1984–91) as for the earlier ones (1976–83). The relationships for college plans-entrance differ from those for military propensity-enlistment in several ways. First, there are no important gender differences in correlations; none of the coefficients for females is lower than the corresponding coefficient for males, and none is more than .03 higher. Second, the data cumulated across three or more years after graduation show slightly stronger correlations than those based on only the first year or two, indicating that the fit between college plans and entrance improved slightly over time. Third, and most important, among females the military propensity-enlistment correlations are far weaker than the correlations between college plans and actual entrance.

The most important comparisons, however, involve males in recent years, and consist of similarities rather than differences. Among males in the classes of 1984–91, the correlation between military propensity and enlistment is fully as strong as the correlation between college plans and entrance during the first year or two after high school. By five or six years after high school a small difference emerged, because the fit with respect to college plans-entrance improved slightly whereas that for military propensity-enlistment remained the same. Nevertheless, whether we look

at just the first year or two after graduation or consider data cumulated across five or six years, the primary finding is that young men's expectations at the end of high school predicted their entrance into military service just about as accurately as their entrance into college.

Discussion

Main Findings

By the time young people reach the final months of high school, the point at which they are surveyed by the *Monitoring the Future* project, they have had ample opportunity to explore their options in some detail, and many have already worked out firm commitments with college or military recruiters. Most individuals who definitely expected to complete a four-year college program had in fact entered college within a few years of high school graduation, and within five or six years many had completed degrees. Similarly, most young men who definitely expected to enter military service had in fact done so within a few years of high school graduation. However, the rates of actual enlistment for high-propensity young women were distinctly lower.

The fact that rates of military entrance among highest propensity young men were nearly equal to rates of college entrance by highest-propensity individuals (men or women) is particularly impressive when we take account of the fact that, among young men in general, rates of military entrance were far lower (about one-third as frequent) compared with college entrance. In other words, going to college may represent the "default option" for the majority of young adults; if so, it is not surprising that many of the individuals who were initially less certain about going to college eventually did attend—sometimes after a delay of several years (as illustrated in Figure 2). Military entrance, on the other hand, was more narrowly limited to those who "definitely" expected to enter, and most of them did so within the first year or two after high school (as can be seen in Figure 1).

Differences from Earlier Research Findings

It has long been known that young people's plans and expectations about military service bear at least some positive relationship to their actual enlistment.¹⁴ The present findings, however, show a dramatically stronger relationship than would have been expected based on previous

research. For example, analyses of data from the YATS of 1976–80, later matched with records of actual accessions, showed the following: among young men who made unaided mention of military service when asked about their future plans (these amounted to only 5 percent of the total sample), 37 percent had entered the armed forces by four to eight years later; among those who when asked said they definitely or probably would enter (23 percent of the total sample), only 15 percent actually did.¹⁵ Later analyses of the YATS samples in 1984–93 have shown similar findings.¹⁶ Our own early analysis of 1975–76 MtF data showed that only one-third of young men expecting “probably” or “definitely” to serve had done so a year after graduation. In contrast, the present findings based on MtF data (see Table 1) show that among male seniors with the highest enlistment propensity (the 12 percent of the total sample who expected “definitely” to serve), fully 70 percent reported they actually were doing or had done this by five or six years after high school.

What might account for these dramatic differences, especially between the present MtF data and the YATS data? We consider below three possible explanations: First, the present analyses looked separately at the two positive propensity categories, whereas earlier analyses combined them. Second, the MtF sample seems to be focused on just the right target group at just the right time, thereby yielding propensity measures that are much firmer than is the case for many individuals in the YATS samples. Third, there are a number of other methodological differences between the studies. We consider each of these explanations in turn.

The present analyses distinguished between those expecting “definitely” to serve in the armed forces and those expecting “probably” to do so. Young men in the highest propensity category were three times as likely as those in the next highest category to enlist within a year or two after high school, and more than twice as likely to have done so within five or six years; among young women the distinctions are even greater (see Table 1 and Figure 1). Incidentally, the distinctions in outcomes between the “probably will” and “definitely will” categories are far less pronounced with respect to college plans (see Table 2 and Figure 2). Taking a second look at the MtF data with the “probably will” and “definitely will” categories of military propensity combined, we found that only 34 percent of all young men in this larger category had enlisted within a year or two after high school—a figure virtually identical to that found in the analysis of MtF men in 1975–76, which combined the two positive propensity categories; we also found that by five or six years after high school a total of 44 percent had enlisted (which is almost three times as high as the 15 percent reported in the YATS analyses).¹⁷

Why does such a large difference remain between the MtF and YATS results, even when the top two propensity categories are combined for the MtF data? We think that much of the answer—perhaps all of it—lies in the differences between the kinds of samples used in the two studies. The YATS samples consisted of males between the ages of sixteen and twenty-one, surveyed in the fall of each year, omitting anyone beyond the second year of college, and also omitting any who had already entered military service. At the bottom end of this age band, we suspect many young men have only unformed or weakly formed military propensities—they simply have not yet had to come to grips with firming up their plans for the years after high school. Also, some of these youngest individuals later drop out of high school; this makes them quite unattractive to the armed services, thus restricting the relationship between their propensities and any actual enlistment. With respect to the upper end of the YATS age band, men aged twenty and twenty-one, it appears that those most likely to enter military service had already done so, and thus were defined out of the YATS samples, leaving in the sample only those with relatively low propensity and very low actual likelihood of entrance. Thus, although the full age band covered by YATS is well suited for some analysis, market research, and policy purposes, it is not ideally suited for demonstrating how strong the propensity-enlistment relationship can be. The MtF samples, in contrast, consist of high school seniors surveyed in the spring of each year, just a few weeks before graduation. These are just the kinds of people the armed forces seek to recruit, and the period prior to graduation is also just the time when young men and women are likely to be exploring options and making arrangements with recruiters. In sum, the MtF samples seem far more precisely targeted than the YATS samples, at least in terms of reaching prime candidates for service at a point in time when their plans and expectations are likely to have been clearly and firmly developed. (We should add, of course, that for many other purposes, such as the exploration of military plans and attitudes prior to the point of firm expectations, the YATS samples are much better targeted than the MtF samples.)

There remain other methodological differences between the YATS data and the MtF data. The baseline propensity data for MtF were taken from self-completed questionnaires group-administered in schools, whereas the YATS propensity data came from individually-administered telephone surveys. The follow-up information for the YATS analyses was derived from administrative records, whereas the MtF data were self-reports from mailed follow-up surveys. Although we cannot be certain, we do not consider it likely that the two methods for collecting baseline propensity

information differ greatly in their ability to generate valid measures of the underlying "true" propensities. The MtF follow-up surveys, however, were subject to panel attrition, which prompted us to employ the imputation procedures discussed in the Methods section. But the imputation did not exaggerate the rates of enlistment among those in the highest-propensity category; in fact, the rates reported here based on full data (incorporating cases requiring imputation) were slightly lower than rates among only those individuals with no missing data, as we have reported in detail elsewhere.¹⁸ One other methodological issue worth noting is the possibility that some of our follow-up respondents distorted their self-reports of military service in order to correspond more closely with their senior-year propensities; it seems quite unlikely to us that such distortions occurred frequently enough to have contributed significantly to the results reported here.

On balance, we think these other methodological differences between the two studies are relatively unimportant, in terms of our findings here. We believe that the dramatically higher correspondence between propensity and enlistment shown in the present analysis results from the finer-grained distinctions in propensity that we employed in the present analyses, and from the fact that the MtF surveys of high school seniors sample individuals who have largely made up their minds one way or the other about military service.

Expectations, Preferences, and Propensity

We noted at several points in this article that "military propensity" can have different meanings, ranging from wishes or preferences to the kinds of firm plans and even commitments that may be in place at the time we assess expectations at the end of senior year. The *Monitoring the Future* surveys include additional questions about *preferences* ("If you could do just what you'd like . . . would you *want* to . . . serve in the Armed Forces?") and about expectations for a *career* in the Armed Forces. In analyses reported elsewhere we found that these measures corresponded closely with expectations, but that they made virtually no additional contribution to the prediction of actual entrance into military service.¹⁹ We do not conclude from these analyses that desires and career interests are irrelevant in any conceptualization about military propensity; rather, it seems clear that these factors are important contributors to the expectation measures obtained late in the senior year. But we do conclude that for practical purposes of forecasting actual enlistment, the *expectations* expressed late in the senior year of high school seem to capture the effects of these other factors quite well.

Changes over Time in the Propensity-Enlistment Relationship

During the period covered by the MtF surveys there have been shifts in the proportions of high school seniors expecting to enter military service, as well as in the proportions planning for and entering college.²⁰ College opportunities and costs, civilian employment opportunities, and the armed forces' resource needs and priorities all affect seniors' desires and expectations, as well as their actual outcomes. It thus seems useful to consider how these factors might influence the relationship between military propensity and actual enlistment.

The all-volunteer armed forces compete with others in the market for qualified high school graduates. Colleges offer ease of entrance and financial incentives in order to attract the most promising students. Young people examine employment opportunities in business and industry, assessing the opportunities for well-paid and stable long-term employment, and businesses in turn offer employment packages designed to attract qualified applicants.

The armed forces are not without resources in this competition. Like any business, the military offers a package of pay and benefits, and it employs a staff of recruiters to sell that package to the most promising young people. Military pay and benefit packages have changed over the years, as have the resources, organization, and management of the recruiting staff. Such changes have been influenced, of course, by the decision to shrink the size of the armed forces since the end of the Cold War. All such changes in military requirements and recruiting efforts may be linked with changes in both propensity and actual enlistment.²¹

In the light of all these changes, it seemed to us quite possible that the strength of relationship between military propensity and actual enlistment might have changed appreciably over the course of the past two decades. In fact, however, we found that propensity-enlistment correlations shifted only modestly across time, although we did note that the correlation for males has grown stronger in recent years (see Table 3). We also noted earlier that findings based on the YATS have been quite consistent across time. This overall consistency, replicated in two independent studies, leaves us fairly confident in predicting that the propensity-enlistment relationship is likely to remain strong in future years. In other words, we believe the present findings have a good deal of generality.

Perhaps one important reason for finding consistency in propensity-enlistment relationships across time, in spite of fluctuations in military requirements, is that the "propensity" measure examined here reflects *expectations* (and often firm arrangements) in place at the end of

high school. Such expectations are correlated strongly, but far from perfectly, with *preferences*. The MtF questionnaires, immediately after asking seniors' expectations about college, military service, and other future possibilities, ask a more hypothetical question: "Suppose you could do just what you'd like and nothing stood in your way. How many of the following things would you *want to do*?" College and military service are included among the options. Although answers to the two kinds of questions generally match, there are notable exceptions. We have consistently found that more young women would want to serve than expect ("probably" or "definitely") to serve, whereas the reverse was true to a small extent among young men until recently. From 1991 onward, however, the proportions of male seniors saying they would want to serve have been just about identical with the proportions expecting that they would.²² That recent decline in expectations, relative to preferences, may reflect realistic reactions to the recent downsizing; whether it will produce any overall increase or decrease in the propensity-enlistment relationship remains to be seen when future follow-up data become available.

Differences Linked to Gender

Young women are less likely than young men to say that they *want* to enter military service, and less likely to *expect* to enter. It is hardly surprising, therefore, that women are also less likely actually to enlist. But there are interesting gender differences in how wishes, expectations, and actual outcomes match—or mismatch. As noted above, the proportions of young men expecting to serve ("definitely" plus "probably") have been roughly equal to the proportions who would want to serve, whereas among young women the proportions expecting to serve are substantially lower than the proportions who indicate that they would like to do so. Further, among women the rates of actual entrance are far lower than expectations, which is much less the case among young men (see Table 1 and Figure 1).

Clearly, military service is less "typical" or "normative" (at least in the statistical sense) for young women than for young men. What is less clear is whether or not that somehow accounts for the lack of close matches between the women's wishes, expectations, and outcomes. We suspect that the norm of masculinity in the military contributes to this difference, both because of perceived limitations in opportunities for women in the military, and because of familial resistance to women joining the armed forces.

Summary, Conclusions, and Implications

The present findings show that the military propensities of most young people are firmly formed by the end of high school, especially among men. Substantial majorities of those young men expecting “definitely” to serve actually do so, usually enlisting within the first year or two after graduation. We believe these findings have several implications for future research.

First, our present findings, coupled with our view of military propensity as a continuum ranging from vague wishes to firm expectations, lead us to suggest that future studies involving broader age ranges (such as provided by the YATS samples) should examine the propensity-enlistment relationship in subgroups stratified by age—or, better yet, by educational attainment. As we argued earlier, there are reasons to expect that the relationship may be strongest when individuals are nearing the end of high school and are making, or already have made, decisions and arrangements concerning what they will do next.

Second, the present detailed examination of MtF *panel* data linking senior year propensity to later enlistment suggests additional uses for the large annual MtF *cross-sectional* samples of high school seniors. One such use could be an annual monitoring of propensity, as well as its correlates. This could provide early indicators of upward and/or downward shifts in desires and expectations concerning military service, and might also provide indicators of changes in other factors found to influence propensity. That in turn suggests the value of a thorough analysis of the potential correlates of propensity, which is the subject of a separate article.²³

Finally, we note that the present findings suggest the usefulness of research on other differences between high- and low-propensity high school seniors, because such research can forecast the actual makeup of the all-volunteer force in the future. Thus, for example, analyses of MtF samples a decade ago provided some evidence of ideological self-selection: “High school seniors who expect to serve in the military are more pro-military than those who do not, and those who anticipate military careers are the most pro-military.”²⁴ Such analyses gain in relevance now that the present research has established the very substantial extent to which those expecting to serve in the military go on to do so.

Notes

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1. Charles C. Moskos, "The Marketplace All-Volunteer Force," in *The All Volunteer Force after a Decade*, eds. William Bowman, Roger Little, and G. Thomas Sicilla (Washington, D.C.: Pergamon-Brassey's, 1986), 15-22.
2. Gary R. Nelson, "The Supply and Quality of First-Term Enlistees under the All-Volunteer Force," in *The All Volunteer Force after a Decade*, 23-51.
3. See, for example, Mady Wechsler Segal, "Women's Military Roles Cross-Nationally," *Gender and Society* 9 (December 1995): 757-775.
4. Bruce R. Orvis, Martin T. Gahart, and Alvin K. Ludwig, *Validity and Usefulness of Enlistment Intention Information* (Santa Monica, CA: RAND Corporation, 1992).
5. Beth Asch and Bruce Orvis, *Recent Recruiting Trends and Their Implications: Preliminary Analysis and Recommendations* (Santa Monica, CA: RAND Corporation, 1994).
6. Jerald G. Bachman, Lloyd D. Johnston, and Patrick M. O'Malley, *The Monitoring the Future Project after Twenty-Two Years: Design and Procedures*, MtF Occasional Paper 38. (Ann Arbor, MI: The Institute for Social Research, 1996).
7. A base year (hereafter, BY) sample is drawn each year using a three-stage probability sampling design to select approximately 130 public and private high schools representative of those in the 48 contiguous states. Professional interviewers from the Institute for Social Research supervise survey activities at the school site, usually during regular classroom periods in March, April, or May. All respondents are asked to fill out one of six forms of a 45-minute, paper and pencil, self-administered questionnaire. Student response rates vary from school to school, between 75 percent and 100 percent, producing sample sizes of roughly 17,000 seniors each year. Because of changes in the questionnaire design, we report data from classes beginning in 1976.
8. From each senior class, 2,400 seniors are selected for follow-up, and randomly divided into two groups, each numbering about 1,200. Members of one group are mailed questionnaires one year after graduation, and every two years thereafter; those in the other groups are mailed questionnaires two years after graduation, and every two years thereafter. Thus, individual participants are surveyed on a two-year cycle,

beginning either one or two years after graduation, for a total of up to seven follow-ups. Respondents are paid \$5 (\$1 beginning with the class of 1991) for each follow-up participation. The follow-up samples are drawn so as to be largely self-weighting; however, because the primary focus of the study is on drug use, users of illicit drugs are oversampled for follow-ups (by a factor of three to one). Weights are used in all analyses to adjust for the differential selection probabilities. In this report, we use base-year data from the classes of 1976 through 1991, with follow-ups through 1995. All respondents from the classes of 1976 through 1989, and one-half of the class of 1990, have had the opportunity to respond to three follow-ups; the class of 1991 has had the opportunity to respond to only two follow-ups.

9. Since *Monitoring the Future* base-year data are collected in schools on a single day, absent students do not complete a questionnaire; consequently, we adjusted for the effects of excluding absentees in our estimates. Students are asked how many days of school they have missed in the previous weeks. Using this variable, individuals are assigned to different strata as a function of how often they are absent. Actual base-year participants in each stratum are weighted to represent all students in their stratum, including absentees on the particular date of administration. Our procedures produce weighted numbers of cases that are somewhat smaller than the actual numbers of follow-up cases (39,761 actual follow-up respondents and of those, 35,693 who answered the base-year propensity question).
10. Of the 33,241 weighted cases used in the analyses, 16,619 (49.9 percent) had observations in all three follow-ups. An additional 4,535 (13.6 percent) weighted cases—with some missing data—were assigned a value based on their prior or subsequent responses; if a respondent at the first or second follow-up indicated having entered military service, later missing values were so coded; and if a respondent indicated in a later follow-up that he or she had never entered military service, then prior missing values were also appropriately coded. One or more values were imputed to the remaining 12,077 (36.3 percent) via a variation of the “hot-deck” imputation procedure (see Roderick Little and Donald Rubin, *Statistical Analysis with Missing Data* [New York: John Wiley and Sons, 1987], esp. pp. 65–71). Each respondent with missing military accession data in any of the follow-ups was matched on senior year propensity, sex, race, and class year with other respondents who provided valid data on military accession at all three follow-ups. Cases with missing values for military accession were “shuffled” in a random order into the set of matched “donor” cases, and their value for military accession was imputed from their nearest neighbor in the stack. We cross-tabulated senior year propensity with subsequent accession in two ways: one was restricted to just those cases with three valid observations, and the other used our total adjusted sample. The two cross-tabulations yielded accession rates from each propensity group that were remarkably similar. In other words, our data imputation did not have significant effects on our central claim that base-year propensity to enlist powerfully related to subsequent accession. However, our adjustments did retain the full proportion of cases with high propensity to enlist. Thus, the effects of our data adjustments were to improve the accuracy of our estimates of overall rates of accession. The appropriate tables and discussion can be found in Jerald G. Bachman, Peter Freedman-Doan, David Segal, and Patrick M. O’Malley, *Military Propensity and the Propensity Enlistment Relationship*, MtF Occasional Paper 39 (Ann Arbor, MI: The Institute for Social Research, 1997).

11. For a fuller discussion of changes over time see Bachman et al., *Military Propensity and the Propensity-Enlistment Relationship*.
12. Asch and Orvis, *Recent Recruiting Trends and Their Implications*, 8.
13. The Pearson correlation coefficient assesses the degree of *linear* association. The eta statistic indicates the strength of the relationship regardless of its linearity; accordingly, the difference between the Pearson correlation and the eta is an indicator of the extent to which the relationship is nonlinear. As can be seen in Figure 1 (and others), the association between propensity and accession is monotonic, but not completely linear (because there is less of a "jump" in the first interval, between the first two categories, compared to the "jumps" associated with the other two intervals). Nevertheless, the association is mostly linear, and the Pearson product-moment correlation coefficient captures the essence of the association. Given its familiarity to most readers, we find it a useful summary statistic.
14. David R. Segal and Jerald G. Bachman, "The Military as an Educational and Training Institution," *Youth and Society* 10 (1978): 127-134; Bruce R. Orvis, Martin T. Gahart, and Alvin K. Ludwig, *Validity and Usefulness of Enlistment Intention Information* (Santa Monica, CA: RAND Corporation, 1992); Veronica Nieva, Michael J. Wilson, Dwayne G. Norris, James B. Greenlees, Janice Laurence, and Rod McCloy, *Enlistment Intentions and Behaviors: A Youth and Parental Model* (Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 1996).
15. Asch and Orvis, *Recent Recruiting Trends and Their Implications*.
16. Bruce Orvis, personal communication, September, 1996.
17. Segal and Bachman, "The Military as an Educational and Training Institution."
18. Bachman et al., *Military Propensity and the Propensity-Enlistment Relationship*.
19. Bachman et al., *Military Propensity and the Propensity-Enlistment Relationship*.
20. Bachman et al., *Military Propensity and the Propensity-Enlistment Relationship*, and Segal and Bachman, "The Military as an Educational and Training Institution."
21. David R. Segal and Jerald G. Bachman, "Change in the All-Volunteer Force: Reflections in Youth Attitudes," in *Marching Towards the 21st Century: Military Manpower and Recruiting*, eds. Mark J. Eitelberg and Stephan L. Mehay (Westport, CT: Greenwood Press, 1994), 149-166.
22. Segal and Bachman, "Change in the All-Volunteer Force," in *Marching*, 153, and Bachman et al., *Military Propensity and the Propensity-Enlistment Relationship*.
23. Jerald G. Bachman, David R. Segal, Peter Freedman-Doan, Patrick M. O'Malley, "Who Chooses Military Service? Correlates of Propensity and Enlistment in the United States Armed Forces," *Military Psychology* (in press).
24. Jerald G. Bachman, Lee Sigelman, and Greg Diamond, "Self-Selection, Socialization, and Distinctive Military Values," *Armed Forces & Society* 13 (1987): 169-187.