Technical Report 1192

Predictors of Attrition in the Finnish Conscript Service

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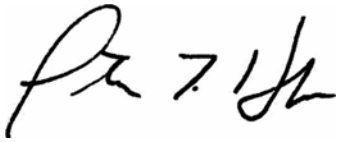

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14. ABSTRACT *(Maximum 200 words)*:

This report describes attrition in the Finnish conscript service and identifies variables that predict attrition and their relative strength as determined by various statistical models. Subjects were 2,003 conscripts, 211 of which were separated before completing their six-month military obligation. The categories of predictors considered include conscript demographic and background variables, aptitude, mental and physical health, and pertinent attitudes and perceptions. The research extends previous research by considering a wider set of predictors, over time, and allows for generalization through the non-U.S. sample. Those separated were significantly different from those completing their military service on numerous predictor variables. Especially strong in predicting attrition were measures of the conscript's sense of military obligation, education level, physical health, criminal record, economic history, expected adjustment, age, and past behavior problems. The models accounted for 25% to 40% of the variance in attrition but were modest in their ability to correctly classify those who were separated.

15. SUBJECT TERMS
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Personnel Performance
and Training

PREDICTORS OF ATTRITION IN THE FINNISH CONSCRIPT SERVICE

EXECUTIVE SUMMARY

Research Requirement:

The purpose of this report is to describe attrition during the initial six months in the Finnish conscript service and to identify variables that predict that attrition, with a special focus on the strongest predictors. The kinds of predictor variables considered include demographic and background variables, conscript aptitude, mental and physical health, and conscript attitudes and perceptions about such matters as expected adjustment to military life, motivation towards military service and training, obeying authority, and sense of military obligation. Most previous research utilized only a subset of these categories of predictor variables. The current research was an effort to extend the previous research through considering a wider set of predictor variables together and over time. Further, the use of a non-U.S. sample of service members allowed for greater generalization of the findings when compared to the majority of the prior research.

Procedure:

Questionnaires were developed by the lead author after a literature review and preliminary interviews with instructors and some conscripts. The resulting instruments, in the Finnish language, were administered at three points in time. At the first point in time, or time 1, data were collected by questionnaire just as the sample of 2,003 inductees entered the service. Most of the questionnaire items were about opinions and attitudes and were responded to by using a 5-point Likert scale varying from a strongly negative answer to a strongly positive one (scored from 1 to 5) or vice versa. A second questionnaire was administered near the end of basic training, time 2, roughly seven weeks into conscript training, when about 1,828 respondents were still available from the starting sample. With the exception of a few items, the second questionnaire was very similar to the first. However, questionnaire items were added to address topics about which the service members now had sufficient information to respond. These added items covered group cohesion and performance, hazing, and leadership during basic training.

A third questionnaire was given near the end of the six-month initial conscript training period, time 3, when about 1,651 respondents were accessible from the starting sample. It included most of the questions and measures used in the prior questionnaires in order to assess changes in conscript attitudes and opinions over the three points in time—start of training, nearing completion of basic training, and about two weeks before the end of special skill training and training in units. Also at time 3, a fourth, official military questionnaire was administered by unit leaders to the conscripts that addressed perceptions of their training and unit leaders.

Findings:

From the beginning sample of 2,003 conscripts, there were 211 cases of attrition. Much (62.1%) of the attrition occurred in the first two weeks, with most (80%) occurring by the first eight weeks, the end of basic training. The most frequent reasons for attrition were due to mental health or adjustment problems. For analysis, the sample was sorted into a *completion group*, consisting of 1,621 conscripts who successfully completed their military service with no restrictions on future assignments, and an *attrition group*, consisting of 174 similarly-responding conscripts who left the service by opting to perform the longer civilian service for ethical reasons (n = 56) or were separated at least in part for mental health reasons (n = 118).

There were many differences between the two groups. The attrition group, compared to the completion group, was in terms of: a) *demographic* predictors—somewhat older; b) *background* predictors—more likely to be married, have a negative work history, come from a broken home, and have completed less education; c) *aptitude* predictors—have less aptitude on all measures and especially mental aptitude; d) *health* predictors—indicated lower mental and physical health; and e) *personality and attitude* predictors—reported a less positive sense of military obligation, expected adjustment to the military, and attitudes toward authority, the conscript service, and their training.

Three analytical procedures were used to determine the most important variables distinguishing the two groups. These were discriminant function analysis, log-linear regression, and Cox-regression analysis. The resulting models for each statistical procedure were similar in the 12 to 16 variables included. The sense of military obligation felt by the conscripts was the top variable included in each model.

Utilization and Dissemination of Findings:

The description of attrition in the Finnish Defence Forces and the determination of the main kinds of variables, including their relative strength, that affect attrition will increase the understanding of attrition in the conscript service and be of use in advancing models to predict and manage attrition as well as setting manpower policy. The findings from this research may also be of value in further designing programs to reduce unwanted attrition. The U.S. Army will be able to use the research results to compare with the attrition in its volunteer-based system to distinguish those characteristics of attrition that are common to both conscript and volunteer-based systems from those that appear relatively unique to each. Additionally, the increased understanding of the main kinds of variables impacting on attrition may help further refine models in its volunteer personnel system. The authors presented an earlier version of this report as a paper, *Predictors of attrition in the Finnish conscript service*, at the 45th Biennial International Conference of the Inter-University Seminar on Armed Forces and Society, Chicago, IL in October 2005.

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Predictors of Attrition in the Finnish Conscript Service

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Predictors of Attrition

Attrition is not a simple matter. Causality exists at the individual, organizational, and manpower policy levels (cf. Dawson, Sharon, Brooks, & McGuire, 1994; Hicks & Nogami, 1984; Hosek, Antel, & Peterson, 1989; Perry, Griffith, & White, 1991). For example, individuals with certain characteristics (such as low aptitude, inability to respond well to authority, and physical weakness) may have a substantially more difficult time adjusting to the requirements of military service and be prone towards attrition. Likewise, organizations may have excessive turnover, a poor climate, mediocre leadership, and less meaningful training that also promote higher attrition. Similarly, attrition policy may be tight or loose, where the same unacceptable behavior may result in remedial training, punishment, or separation from service depending on the policy in force in an organization at the time, the number and rate of other individuals separated from service in the same period, and the shortage or surplus of personnel. As Siebold (1981) noted, if manpower policy overly restricts attrition, underlying problems with service member aptitude, attitude, or behavior may simply be shifted to other arenas such as training, individual and unit performance, or individual and organizational adaptability. Some attrition is probably necessary.

Attrition may be defined simply as the failure of an individual to complete his or her assigned training or tour of duty as scheduled (Allison, 1999; Fischl & Blackwell, 2000; GAO, 1997; Hicks & Nogami, 1984). The amount of attrition is the number of individuals of a specified category or organization who attrit. Usually the amount of attrition is expressed in terms of a given time period as the rate of attrition. The percentage of attrition is the number of personnel of a specified category or organization who attrit divided by the population of individuals in a specified category or organization, also often expressed in terms of a given time period (Siebold, 1981). The attrition decision for an individual can be initiated by the individual, as voluntary attrition, or by the military organization, as involuntary attrition.

In the current research, attrition was considered to be the loss of a conscript before his or her planned period of service, i.e., that occurred during the six-month conscript service period. All different kinds of reasons for attrition were included. As far as possible, the current research was designed to address all the major categories of variables that have been used in prior research to predict attrition at the individual service member level of analysis as well as individual perceptions of some organizational level factors such as training and leadership. These major categories consisted of: a) demographic items, b) aptitude measures, c) background variables, d) mental and physical health, and e) personality and personal attitude variables.

Demographic Items

Age is a commonly used predictor for attrition although the relation between age and attrition is weak. Typically, older recruits are more likely to attrit than younger (Buddin, 1984, 1988; Etcho, 1996; Perry et al., 1991; Talcott, Haddock, Klesges, Lando, & Fiedler, 1999; Vickers, Walton-Paxton, Hervig, & Conway, 1993). In some cases older recruits have lower attrition probabilities than 18-year-old recruits; in other cases, they have higher attrition probabilities (Elis, 1999). For example, Blandin and Morris (1982), and Elis (1999) found lower attrition rates for 18-year-old enlistees than younger or older recruits.

Race and gender also have been used as predictors of attrition and maladjustment. Generally females have higher attrition rates than males (Booth-Kewley et al., 2002; Elis, 1999; Etcho, 1996; Moore, 2002; Perry et al., 1991). But the black female rate was found to be significantly lower than the overall male rate (Elis, 1999). It is important to emphasize that causes of attrition may be different for males than females. For instance, females, who tend to have more education and better GT scores than males, are more likely to attrit for medical reasons while men are more likely to receive unsuitability discharges (Etcho, 1996; Manning & Ingraham, 1981; Siebold & Benton, 2001). In many studies race (often combined with gender) has been an important variable for predicting attrition (Buddin, 1984; Elis, 1999; Etcho, 1996; Faris, 1984; Moore, 2002; Perry et al., 1991). In the current research, race was not included as a variable because all conscripts were Caucasian. Gender effects were examined, although there were only 34 female conscripts (1.7% of the sample).

Moore (2002) found marital status to be the second most important demographic variable in explaining who will complete their tour of duty in the military, with married personnel less prone to attrition. On the other hand, Siebold and Benton (2001) found no relation between marital status or having dependents and attrition from foreign language training. In the current research, marital status was also measured. Respondents were asked to report whether they were single, dating, engaged, or married upon entry into military service.

Aptitude Measures

Aptitude tests have traditionally been used as tools to estimate recruit quality and the likelihood of attrition (Benbenishty, Zirlin-Shemesh, & Kaplan, 1993; Borack, 1994; Hawes, 1990; Larson, Booth-Kewley, & Ryan, 2002). It has been found that low mental aptitude or intelligence increases the probability of attrition (Allison, 1999; Blandin & Morris, 1982; Bohn & Schmitz, 1996; Buddin, 1984, 1988; Dovrat, 1995; Elis, 1999; Etcho, 1996; Fischl &

Blackwell, 2000; GAO, 1998; Golding et al., 2001; Hawes, 1990; Hicks & Nogami, 1984; Vickers et al., 1993). Likewise higher aptitude scores are related with a high likelihood that service members will complete their service (Antel, Hosek, & Peterson, 1987; Bohn & Schmitz, 1996; Elis, 1999; Hawes, 1990). For example, Benton and Siebold (2002) found that the primary determinant of success and completion of foreign language training was a student's score on the Defense Language Aptitude Battery. For the current research, a conscript's physical aptitude was estimated with a 12-minute run test. Mental aptitude was estimated from two tests that measured a person's intelligence and his or her leadership and social skills as well as estimated from grade point average in comprehensive school.

Background Variables

Past research found that those who attritted were more likely to have been unemployed, to have failed at learning and work, and to come from broken homes than those who completed their military training or service (Buddin, 1984; Dovrat, 1995). Similarly, attitudes of family members, friends, and significant others were seen to be an important source of support for service members (Siebold, 2001a; Thompson & Gignac, 2001) and an influence on a conscript's attitudes, adjustment, and likelihood of attrition (Hayden, 2000; Shaw, Fisher, & Woodman, 1983; Siebold, 2001b).

Those who attritted had more indications of social and behavioral problems like criminal behavior and alcohol or drug abuse before service (Benbenishty et al, 1993; Dawson et al., 1994; Dovrat, 1995; Manning & Ingraham, 1981; Wilson & Herrnstein, 1985). Those who entered military service with moral waivers (i.e., people who have been allowed to enter despite some past record of social or behavioral problems) are more likely to attrit due to unsuitability (Bohn & Schmitz, 1996; Etcho, 1996; Hawes 1990). Having a criminal record is a good predictor of a service member's likelihood of attrition (Bohn & Schmitz, 1996; Manning & Ingraham, 1981).

Previous adjustment to an educational system constitutes a relevant indicator of a recruit's likelihood to adjust to military life (Anderson, 1974). Having a low level of education (normally defined as less than a high school education) has been shown to be a significant predictor of military attrition (Allison, 1999; Antel et al., 1987; Booth-Kewley et al., 2002; Buddin, 1984; Dovrat, 1995; Elis, 1999; Etcho, 1996; Fischl & Blackwell, 2000; GAO, 1998; Golding et al., 2001; Hawes, 1990; Hosek et al., 1989; Manigart & Prensky, 1982; Manning & Ingraham, 1981; McBride, 1993; Moore, 2002; Price & Sang-Wook, 1993; Quester, 1999; Talcott et al., 1999; White, Nord, Mael, & Young, 1993; Zook, 1996). Generally, attrition rates of non-high school graduates have been at least 10% higher than those of high school graduates and in some cases even twice as high.

Due to the predictive power of education level, it is typically used for selecting personnel for service in volunteer-based systems. However, since most inductees in the U.S., for example, already have a high school diploma, education level is no longer a good indicator of attrition (Moore, 2002). In some conscription-based military systems education level is used at least to understand adjustment problems (attrition) and to select people for different kinds of tasks (Dovrat 1995). In societies where there is still variance in previous education levels of recruits,

school achievement variables may be regarded as valid indicators of prior adjustment to a disciplined and structured environment.

Time spent in education is as important a predictor of attrition as education level attained (Blandin & Morris, 1982; Fischl & Blackwell, 2000; Hawes, 1990; Moore, 2002). "Seat-time" in prior schooling might be the reason why high school diploma graduates have a decreased attrition risk (Hawes, 1990). Presumably, experiences at school such as social interaction, with self-discipline, and in learning new things have some kind of attrition-prevention influence. For example, Hawes (1990) found that low aptitude high school graduates were less likely to attrit than high aptitude personnel who did not finish high school.

Success at civilian school is an indication of intellectual ability, acceptance of authority, ability to adapt, capacity to tolerate adversity, maturity, and an ability to work persistently for long-range goals – individual characteristics that are also needed for adequate adjustment in the military (Anderson, 1974; Stephen, Carroll, & Brown, 1972). Thus, recruits who had low grades at school also had a higher than average risk of attrition (Dale, 1989). Overall almost any sign of difficulty in school (discipline, learning, or social problems) is related to having problems during military service (Benbenishty et al., 1993; Booth-Kewley et al., 2002).

For the current research, many background variables were measured including father's occupational group, the existence of personal loans, education level, where the conscript lived, his or her work situation, post-service plans, family support, criminal record, alcohol use, and attitude towards drugs.

Mental and Physical Health

Benbenishty et al. (1993) found that a history of mental health problems was strongly related with maladjustment and attrition. For instance, thoughts about committing suicide were noted five times more often by attritees than by those who completed their obligation. Larson et al. (2002) used a "depression / anxiety" factor which accounted for more of the variance (11.6%) predicting attrition than other risk factors. Overall they concluded in their study that the best predictors of attrition are psychological and behavioral in nature, not demographic or medical. Generally, mental health problems prevent adaptation to the military (Dawson et al., 1994). In Finland, the most serious mental-health cases are selected out during the call up process. In the current research, a scale was used that measured the mental state of conscripts. It included five items like "I often feel depressed", "I have had suicidal thoughts", and "I have often had feelings that life is not worth living."

Being in good physical condition and exercising helps recruits meet both mental and physical stress during the initial entry training (Allison, 1999; Gebicke, 1999; Hayden, 2000; Horne, 1987). Those physically prepared for military service have a reduced risk of being separated from service (Allison, 1999; Booth-Kewley et al., 2002). Although physical fitness facilitates adjustment, it is not as crucial a factor as mental state for predicting attrition (Benbenishty et al., 1993). Yet some individual indicators of physical health are good predictors of attrition. For instance, extremely heavy individuals or those who have asthma have a high attrition risk (Fischl & Blackwell, 2000; Larson et al., 2002). In the current research, a

conscript's physical health was measured by a scale composed of the items: "My health corresponds to the demands of military service" and "I can manage the physical performances of military service."

When stress overcomes a conscript's ability to cope with military service, dropping out is one way to deal with the stressful situation. Vickers et al.(1993) predicted attrition in their stress reactive typology groups and found that stress reactive recruits had a higher likelihood to attrit than stress resistant recruits and that there is a significant association between reactivity status and actual attrition. In the current research, there was no attempt to measure conscripts' stress reactivity. Instead, respondents were asked about whether they had experienced stressful life changes during the prior year such as whether they had quarrels at home, disease, an injury, a relationship that ended, or were fired from work.

Personality and Personal Attitudes

Expectations. Expectations about various aspects of military service, and whether they are met, can influence attrition and the conscript's ability to cope, with those who have positive, realistic expectations more likely to adjust (Buddin, 1984; Catanzaro & Mearns 1999; Dawson et al., 1994; Kassel, Jackson, & Unrod, 2000; Lazarus & Folkman, 1984; Pierce & Lydon, 1998; Thompson & Gignac, 2001). These expectations toward military service are provided by the home, friends, school, media, and national events (Anderson, 1974; Bourdieu, 1977, 1993a, 1993b, 1994). Having accurate and complete information is also related to having positive expectations and adjustment (Shaw et al., 1983). It has been asserted that a conscript's having correct information and realistic expectations is related to a person's aptitude; those who have a good ability to plan can evaluate their future and possibilities more accurately (Antel et al., 1987). However, positive expectations and attitudes do not guarantee excellent adaptation; those who have the most positive expectations might have more difficulty facing the reality of the first weeks of military service (as suggested by the findings of Pancer, Hunsberger, Pratt, & Alisat, 2000; Thompson & Gignac, 2001; Thompson & Holmes, 1996).

Attitudes and Self-Assessments of Adjustment. People have an ability to prepare mentally and physically for future demands by making calculations and plans, taking on reasonable tasks, seeking information and feedback, training and exercising, preparing for probable difficulties, and keeping their options open (Hamburg, Coelho, & Adams, 1974). People can also assess how their personal coping skills match the demands of the military environment and the likelihood of positive or negative outcomes based on that coping (Bandura, 1982). Shaw et al. (1983) concluded that an individual's adjustment (self-rated) was best predicted by his expected adjustment. The current research used a scale measuring conscript expected adjustment to military service.

Low motivation by a conscript can be demonstrated in an active way when a conscript struggles against his or her service by avoiding it (e.g., AWOL, seeking medical exemptions from training, or even dropping out of the system—attrition) or in a passive way when a conscript shows little initiative or desire to learn during training (Dovrat 1995). It is not surprising that a positive attitude towards military service has been seen as an important variable for adjustment and avoiding attrition (Dawson et al., 1994; Manning & Ingraham, 1981).

Personality Characteristics: Social Adjustment and Obeying Authority. Personality characteristics like low self-esteem, a low frustration level, problems with authority, and high aggression have been more often found in those who attrit than others (Dovrat, 1995). Similarly, the more a recruit has problems with morale, self-discipline, self-esteem, pride, and commitment, the less is his or her likelihood to complete their service (Dawson et al., 1994; Hayden, 2000; Manning & Ingraham, 1981; Moore, 2002). Dovrat (1995) mentioned that those who do not adjust often lack identification with important social values and lack commitment. Generally, attritees have less of a personal capacity to adjust socially and emotionally to military service (Manning & Ingraham, 1981). The current research utilized scales measuring several personality characteristics such as one on a conscript's reported ability to obey authority.

Method

Sample

Every male Finnish citizen is by law liable for compulsory military service. Females may volunteer. Exemption from military service is permitted only if a person a) has an expatriate dual citizenship, b) is a Jehovah's Witness, c) has a serious health reason, or d) has an approved registration for alternate civil service (CDDS, 2003). In practice, only the last two categories are important. A conscript who is not fit for military service may be exempted from peacetime duty (C class exemption) or also from wartime duty (D class exemption). The most common exemption is for a certain period (E class, for one or two years) after which the conscript has to serve in the military. An E class exemption can be for a physical reason (e.g., bone fracture) or mental reason (e.g., an adjustment problem). Alternate civilian service lasts about 13 months. Annually about 12-15 % of the conscript male population is exempted from military service, with about one quarter of those exemptions from military service for alternate civilian service and just over one half of those for an E class exemption. Military service for new conscripts lasts 180 days for most rank and file members, with longer periods, of 270 or 362 days, for highly technical rank-and-file duties and for leaders. New conscripts are inducted twice a year, in January or in July. Generally this happens in the year when a male reaches the age of 19 or 20 (IDDS, 2002; CDDS, 2003). The flow of conscript training is depicted in Figure 1.

The sample was composed of those inducted in 2001 as the first (starting in January) or second (starting in July) contingent to the armored brigade in Hattula in south-central Finland. At the start, the sample consisted of 2,003 conscripts, close to 100% of both contingents. Annually about 30,000 men enter military service in various locations and branches. Thus the sample represented about 1 out of 15 of the military service initial training population in Finland during 2001. Another 10 conscripts had started military service with earlier contingents, were separated (E class attrition) before fulfilling their service obligation, and were completing that military obligation by returning to service with the 2001 contingents. Because of their different circumstances, these prior service conscripts were not included in the sample of 2,003 new conscripts.

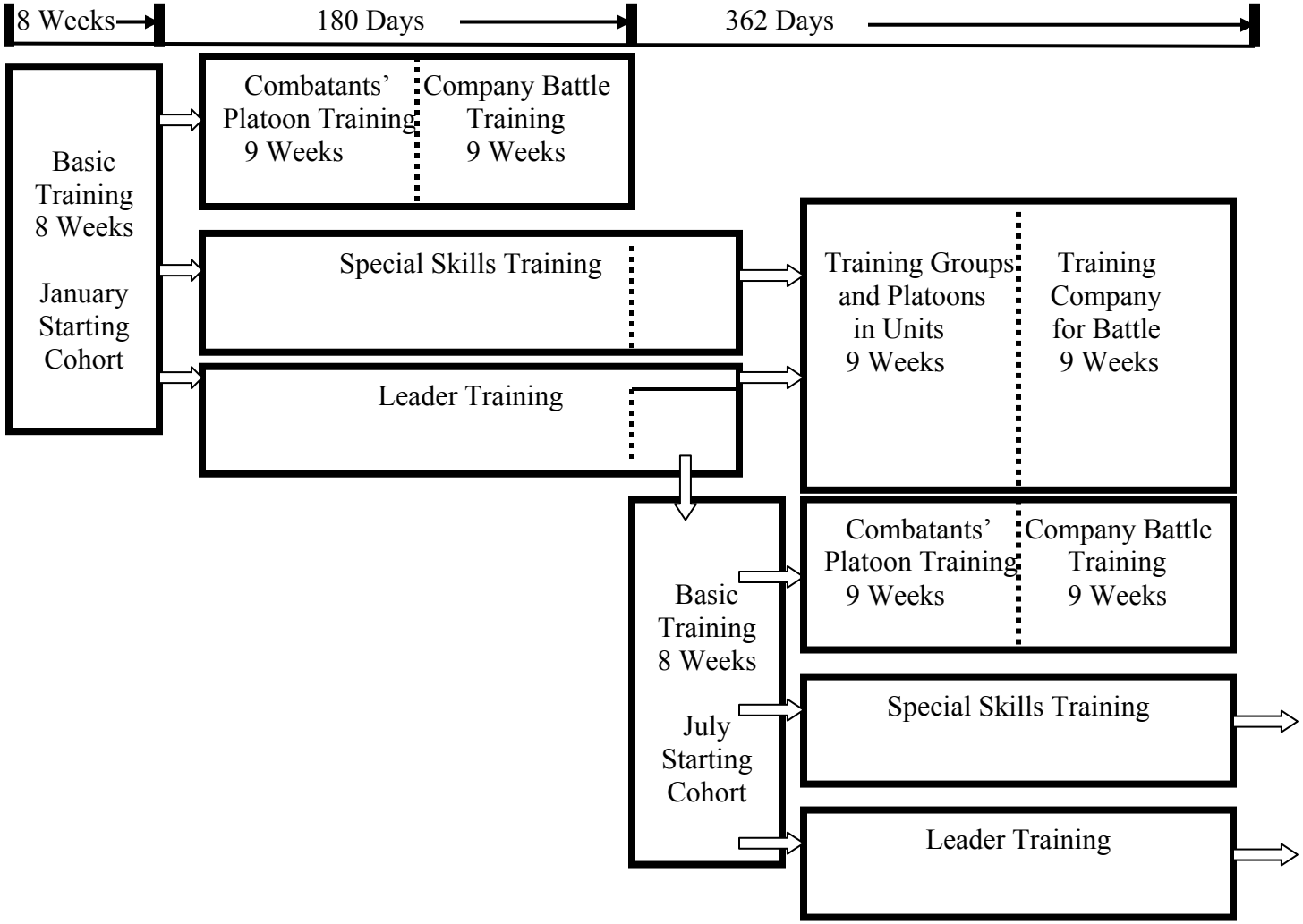

Figure 1. *Periods of conscript training.*

Questionnaire Administration

Questionnaires were developed by the lead author after a literature review and preliminary interviews with instructors and some conscripts during the fall of 2000. The resulting instruments, in the Finnish language, were administered at three points in time. At the first point in time, or time 1, data were collected by questionnaire just as the inductees entered the service. The questionnaire was administered by the lead author of this paper on the day recruits reported for duty, when most had little or no direct experience with military service or military life. Most of the questionnaire items were about opinions and attitudes and were responded to by using a 5-point Likert scale varying from a strongly negative answer to a strongly positive one (scored from 1 to 5) or vice versa. Questionnaire items about life changes had dichotomous response alternatives, i.e., whether they did or did not occur.

A second questionnaire was administered by the lead author near the end of basic training, time 2, roughly seven weeks into conscript training, when approximately 1,828 respondents were still available from the starting sample. With the exception of a few items, the second questionnaire was very similar to the first, enabling a continuity of measures so that changes could be analyzed over time. Most personnel information acquired with the first questionnaire (during the time 1 baseline data collection) was not asked for again since that information was already obtained. However, questionnaire items were added to address topics about which the service members now had sufficient information to respond. These added items covered group cohesion and performance, hazing, and leadership during basic training.

A third questionnaire was given out by unit leaders near the end of the six-month initial conscript training period, time 3, when about 1,651 respondents were accessible from the starting sample. It included most of the questions and measures used in the prior questionnaires in order to assess changes in conscript attitudes and opinions over the three points in time—start of training, nearing completion of basic training, and about two weeks before the end of special skill training and training in units. Also at time 3, a fourth, official military questionnaire was administered by unit leaders to the conscripts that addressed perceptions of their training and unit leaders. Data from parts of this official questionnaire were incorporated into the present research.

Measures

Based on the attrition research literature and factor analyses of conscript responses to the questionnaires, scales measuring the main constructs of interest were developed. Specifically, in the factor analysis, items whose responses loaded strongly (>.40) on the same factor, and which were thought to be related to one another by the literature and interviews, were utilized as measures of over-arching constructs. Items from the questionnaires that did not load significantly on a factor or did not seem logically related to other items in the factor were excluded. The major questionnaire scales with their individual items, item means, item standard deviations, Cronbach's alpha, item-scale total correlations, scale means, and scale standard deviations were computed. Some item responses were reverse coded so that higher item and scale scores in each case reflected more positive responses. Also, some individual background items, not part of the scales or factor analyses, were used in various analyses. The primary measures of attrition were

official personnel records that included official categories of reasons for attrition. The training stage during which attrition occurred was also noted.

Findings

Amount of Attrition Over Time

There were 2,003 service members in the beginning sample. Of those cases, 1,621 (A class) successfully completed their 180 days of conscript training without any limitations on future service. Another 171 (B class) service members completed their training but had some restrictions on their future service, typically due to minor health conditions such as serious allergies or asthma. From the beginning sample, there were 211 cases of attrition (10.5%), i.e., service members who were separated from military service. Most of these (62.1%) were separated in the first two weeks of service. Over 80% of attritees were separated by the end of the 8 weeks of basic training. The amount of attrition by reason, class, and time is presented in Table 1.

In total, 66 service members chose not to serve further in military service by requesting the longer civilian service alternative for religious reasons (n = 4) or ethical reasons (n = 56) or, as females (n = 6), by exercising their option to withdraw from service in the first 45 days at their discretion. Most of these choices were made by the end of basic training. The remaining attritees were separated from service by the collective decisions of doctors and military leaders. The largest category of the reasons given for attrition was that of attrition due to mental health or adjustment problems (E class).

Group Differences on Predictor Variables

The next step after determining the amount of attrition by reason and training stage was to find out how the groups of those separated for different reasons were similar or dissimilar from each other in terms of the predictor variables and how those who attritted differed from those who completed their conscript training without any restrictions (A class). In order to compare the various groups (by reason for attrition or with A class), means were computed for each group on the predictor scales and other variables. Some of the more important predictor scales are presented in detail in Table 2 to give the reader a clearer picture of those measures. The comparison of means on the predictor variables among the attritee groups and with those in A class were carried out by a Scheffe test, using SPSS for Windows.

The group of conscripts who selected civilian service for religious reasons and the 6 female attritees were similar to each other and the A class group on almost all the main predictor variables. Because of that similarity and the small size of each group, those who selected civilian service for religious reasons and the female attritees were eliminated from the sample in further analyses, as were the individual who refused to serve and the person attritting for serious physical health (D class) reasons. Over most of the predictor variables, those selecting civilian service for ethical reasons, those separated for mental health and adjustment reasons (E class), those separated for mental health with physical reasons (E class), and those separated for mental health with physical reasons (C class) were not significantly dissimilar to each other but were

dissimilar to the A class and the physical health (E class) attritees. Therefore, those selecting civilian service for ethical reasons and those in the three groups who were separated at least in part for mental health reasons were combined into one group (n = 174) for further analyses.

Table 1
Frequency of Attrition by Reason, Class, and Time in Training

Reason for Attrition (Class)	1-2 Weeks	3-8 Weeks	9 Weeks or Later	All Cases
Civilian Service (Religious)	2	2	-	4 (1.9 %)
Civilian Service (Ethical)*	42	7	7	56 (26.5 %)
Mental Health / Physical (E)*	11	2	4	17 (8.1 %)
Mental Health / Adjustment (E)*	51	12	13	76 (36.0 %)
Mental Health / Physical (C)*	10	7	8	25 (11.8 %)
Physical Health (D)	-	1	-	1 (0.5 %)
Physical Health (E)	11	6	8	25 (11.8 %)
Refused to Serve	-	-	1	1 (0.5 %)
Exercised Woman's Option	4	2	-	6 (2.8 %)
Total N	131 (62.1 %)	39 (18.5 %)	41 (19.4 %)	211 (100%/99.9%)

Note. In E class attrition, service members must perform their service obligation at a later date. In C class, service members have no further obligation, unless there is a war. In D class attrition, service members have no further obligation even if there is a war. * = reasons for attrition groups that were combined (n = 174) for analysis to compare with the A class group (n = 1,621) that successfully completed military service with no restrictions on future assignments.

Those in the group that attritted for physical health reasons (E class, n = 25) were similar to those who completed training but with restrictions on future service due to physical health reasons (B class). These two groups had means that tended to be in the middle, i.e., higher than those separated in part for mental health reasons but lower than those in A class. For example, on the scale measuring expected adjustment to military service, the means for those groups attritting for mental health reasons or selecting civilian service for ethical reasons ranged from 3.0 to 3.5; the mean of those in B class and the mean of those attritting for physical health reasons (E class) were both 3.8; and the means of those in A class and those selecting civilian service for religious reasons were both 4.0. Because the group of those attritting for physical health reasons (E class) was very similar to the A class except for variables that dealt with some aspect of physical health, that group was also eliminated from further analyses, as variation that was already "explained." Thus the focus of additional analyses was on comparing the combined group of attritees (with attrition due at least in part for mental health reasons) and of those selecting civilian service for ethical reasons, hereafter labeled as the *attrition group*, with the A class (i.e., those who completed their service with no future assignment restrictions), hereafter labeled as the *completion group*.

Table 2
Scales for predicting attrition and completion of service

MILITARY ADJUSTMENT

1. I will adjust to military discipline. (M = 3.7, SD = .81)
2. I will adjust to being away from my family. (M = 4.3, SD = .89)
3. I will adjust to being away from my friends. (M = 3.9, SD = 1.05)
4. I will adjust to military service. (M = 4.0, SD = .93)
5. I will adjust to rush and a strict timetable. (M = 3.6, SD = 1.08)
6. I will cope with the mental pressure of conscript training. (M = 3.9, SD = .88)

Response options for all items: 1= Poorly, 2 = Fairly poorly, 3 = I am not sure, 4 = Fairly good, 5 = Good.
Scale data: α = .80; item-total r range = .42 - .70; M = 3.89; SD = .69; n = 2,003.

SENSE OF MILITARY OBLIGATION

1. I have considered applying for civilian service. (M = 4.6; SD = 1.05)
2. I have considered dropping out of service. (M = 4.5; SD = 1.03)
3. All men should carry out military service as a part of total defence. (M = 4.1; SD = 1.20)
4. Military service is every male citizen's duty. (M = 4.3; SD = 1.15)

Response options for all other scale items: Totally agree, Partly agree, Difficult to say, Partly disagree, Totally disagree.
Scale data: α = .78; item-total *r* range = .52 - .69; M = 4.36; SD = .87; n = 2,003.

ATTITUDE TOWARDS CONSCRIPT SERVICE

1. Military service is useless and unnecessary. (M = 3.9; SD = 1.20)
2. I am not interested in military service. (M = 3.7; SD = 1.27)
3. I am highly motivated to complete my military service. (M = 3.7; SD = 1.22)
4. I will feel at home in military service. (M = 3.4; SD = 1.08)

Scale data: α = .84; item-total *r* range = .61 - .74; M = 3.67; SD = 1.00; n = 2,003.

ADJUSTMENT IN CIVILIAN SCHOOLING

1. I adjusted to comprehensive school. (M = 4.2; SD = 1.04)
2. I felt at home at school. (M = 3.5; SD = 1.14)

Scale data: α = .71; item-total *r* = .55; M = 3.87; SD = .96; n = 2,001.

PHYSICAL HEALTH

1. My health corresponds to the demands of military service. (M = 4.1; SD = 1.01)
2. I can manage the physical performances of military service. (M = 3.8; SD = .98)

Scale data: α = .76; item-total *r* = .62; M = 3.93; SD = .90; n = 2,003.

MENTAL STATE

1. I often feel depressed. (M = 4.1; SD = 1.15)
2. I have had suicidal thoughts. (M = 4.6; SD = .99)
3. I have often had feelings that life is not worth living. (M = 4.5; SD = 1.09)
4. I am often anxious and tense. (M = 4.0; SD = 1.17)
5. If I could live my life all over again, I would do almost everything differently. (M = 4.1; SD = 1.10)

Scale data: α = .76; item-total *r* range = .44 - .57; M = 4.26; SD = .79; n = 2,003.

Over most of the predictor variables, the means of the completion group (A class) were significantly more positive than those of the attrition group (see Table 3). The only important demographic predictor was age, where conscripts in the attrition group were a little older than those in the completion group, which is consistent with the majority of the literature on the impact of age on attrition. As noted earlier, females, whether they attritted or finished their training, were similar to the completion group on most predictor variables. Marital status is reported in Table 3 as a background variable under the "Social Relationships" subcategory. Those in the attrition group were significantly more likely to be married than those in the completion group, who were more likely to be single than attritees. Again, consistent with the attrition literature, the completion group was higher than the attrition group on all aptitude measures, especially mental aptitude.

In terms of background predictor variables, those in the attrition group had a more negative work history, came from a less positive economic situation, were more likely to come from a broken home where there were more quarrels, and where their parents had a less positive view towards military service. Also consistent with the literature, the attrition group had a lower education level and was more likely to report having learning troubles at school and being less adjusted there. Those in the attrition group were more likely to have been involved with the criminal justice system and to use either too much or no alcohol (as opposed to moderate drinking). Additionally, those in the attrition group reported less positive mental health and physical health, as well as exercising less.

On the scales measuring various personality factors and attitudes, those in the completion group had uniformly more positive means. This was especially the case for scales measuring the conscript's sense of military obligation, expected military adjustment, capability of obeying authority, attitude towards conscript service, and attitude towards training. The clear distinction between the attrition group and the completion group on the personality and attitude factors provides strong support for the inclusion of such measures in researching and modeling attrition. In all, Table 3 shows there were many predictor variables on which there was a significant difference between the attrition and completion groups. These identified predictor variables are consistent with the findings of much prior research. Nonetheless, for the sake of parsimony and to suggest focal targets for policy change or attrition prevention programs, it was desirable to whittle this large array of predictor variables down to those that were the most powerful. In short, the statistically significant predictor variables needed not only to be identified but to be assigned their relative weights.

The Strongest Predictor Variables

To determine the strongest predictor variables, three different approaches were used: discriminant analysis, log-linear regression, and survival analysis. Each approach provided similar results in terms of the set of overall strongest predictors. Note that the purpose of using these approaches was primarily to find the dominant variables for predicting attrition rather than developing, fine-tuning, and testing an optimum model (for comparable analyses on a U.S. Army longitudinal sample, see Strickland, 2005).

Table 3
Model for predictor variables that were significantly different between groups

Categories and Variables of Predictors	Attrition Group		Completion Group	
	M	SD	M	SD
1. Demographic Items				
Age*	3.0	1.33	2.7	.85
2. Aptitude Measures				
GPA in comprehensive school***	4.5	1.83	5.8	1.73
Aptitude test 1 ("IQ" test)***	4.3	1.94	5.1	1.81
Aptitude test 2 (leadership and social skills)**	2.0	2.05	3.0	1.98
12-minute run test (distance run)***	3.6	1.37	3.9	1.47
3. Background variables				
a) Work History				
Had no job; not in school (d)***	.4	.48	.2	.41
Was fired from a job (d)'	.1	.26	.0	.16
Quarreled with a teacher or a supervisor (d)***	.3	.44	.1	.32
b) Economic Situation				
Had one or more loans (d)***	.5	.50	.2	.41
Had little money (d)***	.7	.45	.4	.50
Father was mid-level white collar (d)**	.1	.29	.2	.41
Father was unemployed (d)***	.1	.29	.0	.17
Father was in "other" occupation (d)**	.1	.34	.1	.24
c) Social Relationships with Parents and Significant Others				
Had lived in many places***	2.0	1.23	1.7	.95
Had lived at home with parents (d)***	.5	.50	.7	.46
Parents were divorced (d)***	.4	.50	.2	.43
Got along with parents well***	3.8	1.42	4.5	.97
Reported quarrels at home (d)*	.5	.50	.4	.49
Parents have a positive attitude about military service***	4.1	1.24	4.6	.85
Father's rank in military service*	2.7	1.62	3.2	1.72
Significant others had a positive attitude about service***	3.2	1.42	3.9	1.20
Single (d)***	.4	.50	.6	.50
Engaged (d)***	.1	.36	.1	.25
Married (d)***	.1	.32	.0	.19
Reported quarrels with girlfriend (d)*	.3	.49	.3	.45
d) Education Experience				
Only finished comprehensive school (d)***	.4	.50	.1	.34
Finished high school (d)***	.1	.34	.5	.50
Had learning troubles at school (d)***	.4	.49	.1	.36
Adjustment in Civilian Schooling (S)***	3.0	1.19	4.0	.87

Table 3 (continued)

Categories and Variables of Predictors	Attrition Group		Completion Group	
	M	SD	M	SD
e) Deviant Behavior				
Was accused of a crime (d)***	.4	.50	.2	.38
Had criminal record (d)***	.1	.27	.0	.12
Was charged with offence as civilian (d)***	.5	.50	.2	.41
Had been arrested (d)***	.1	.27	.0	.10
Limited their use of alcohol**	2.8	1.19	3.1	.88
Attitude against drugs***	4.0	1.13	4.5	.78
Thinks drug tests should not be allowed (d)***	.4	.49	.2	.39
4. Mental and Physical Health				
Mental State (S)***	3.6	.97	4.3	.73
Reported sleeping disorders (d)***	.6	.50	.3	.45
Physical Health (S)***	3.2	1.20	4.1	.80
Reported disease or injury (d)***	.4	.50	.3	.44
Frequency of exercising***	2.4	1.51	3.3	1.49
5. Personality and Personal Attitudes				
Sense of Military Obligation (S)***	3.5	1.14	4.5	.76
Military Adjustment (S)***	3.2	.95	4.0	.62
Social Adjustment (S)***	3.7	.94	4.2	.58
Relationship Difficulty (S)***	3.5	.98	3.9	.77
Obeying Authority (S)***	3.2	1.05	4.0	.79
Attitude Towards Conscript Service (S)***	2.8	1.06	3.7	.90
Attitude Towards Training (S)***	3.0	1.06	3.9	.88
Requested branch / duty / service period***	1.6	.72	2.5	1.08
Received enough information about conscription*	3.1	1.21	3.4	1.20

Note. (S) = scale. (d) = computed as a dummy variable. GPA = grade point average. * = $p < .05$; ** = $p < .01$; *** = $p < .001$. Attrition Group n = 174. Completion Group n = 1,621. Means were compared using the Scheffe test.

Discriminant analysis is a statistical procedure that finds the predictor variables that maximally distinguish between the states of the dependent variable (i.e., attrition or completion). The result of the procedure is a discriminant function which, among other things, provides the relative weight of each utilized variable in making the maximal distinction between, in this research, those who attritted and those who completed six months of military service. The results of the discriminant analysis are portrayed in Tables 4-6.

Table 4 presents the 15 strongest variables for distinguishing between the attrition group and the completion group. Notable in the table is that the majority and the strongest of the predictor variables that separate the attrition group from the completion group are personality and attitude scales from the questionnaires, rather than demographic, aptitude, or background variables. Mental and physical health scales are also important. Table 5 presents the best

discriminating model in which the variables are entered in stepwise fashion; a variable's entry is dependent upon its adding additional discriminating (explanatory) power considering the variables that were entered before it. The picture in this table is a bit different from that in Table 4. In Table 5, with stepwise variable entry, the independent influence of background variables comes much more into play. As in much of the literature, lower education attainment and adjustment, a criminal record, a poor economic history, and health issues are associated with attrition. The canonical correlation for the discriminant function is .5, suggesting that it "explains" around 25% of the variance.

Table 4

Within-group correlations with standardized canonical discriminant functions, means, and standard deviations for the 15 strongest discriminating variables

Strongest Discriminating Variables	Correlation with Discriminant Function	Attrition Group		Completion Group	
		M	SD	M	SD
1) Sense of Military Obligation (S)	-.62	3.5	1.14	4.5	.76
2) Military Adjustment (S)	-.56	3.2	.95	4.0	.62
3)Attitude Towards Conscript Service (S)	-.54	2.8	1.06	3.7	.90
4) Adjustment in Civilian Schooling (S)	-.53	3.0	1.19	4.0	.87
5) Obeying Authority (S)	-.52	3.2	1.05	4.0	.79
6) Attitude Towards Training (S)	-.51	3.0	1.06	3.9	.88
7) Physical Health (S)	-.51	3.2	1.20	4.1	.80
8) Only finished comprehensive school (d)	.46	.4	.50	.1	.34
9) Requested branch/duty/service period	-.43	1.6	.72	2.5	1.08
10) Mental State (S)	-.41	3.6	.97	4.3	.73
11) Social Adjustment (S)	-.41	3.7	.94	4.2	.58
12) Relationship Difficulty (S)	-.37	3.5	.98	3.9	.77
13) Had one or more loans (d)	.35	.5	.50	.2	.41
14) Was charged with offence as civilian (d)	.35	.5	.50	.2	.41
15) GPA in comprehensive school	-.34	4.5	1.83	5.8	1.73

Note. Variables are ordered by absolute size of correlation with the discriminant function. (S) = scale. (d) = computed as a dummy variable. GPA = grade point average. Attrition Group n = 171. Completion Group n = 1,599.

Table 5
Model for discriminating attrition group from completion group

Best Discriminators for Group Membership	Standardized Coefficients	Correlation with Discriminant Function
1) Sense of Military Obligation (S)	-.41	-.62
2) Only finished comprehensive school (d)	.30	.46
3) Military Adjustment (S)	-.21	-.56
4) Had been arrested (d)	.20	.30
5) Had one or more loans (d)	.13	.35
6) Adjustment in Civilian Schooling (S)	-.20	-.53
7) Engaged (d)	.18	.17
8) Had lived in many places	.14	.17
9) Physical Health (S)	-.16	-.51
10) Age	.16	.17
11) Had no job; not in school (d)	.10	.19
12) Was charged with offence as civilian (d)	.17	.35
13) Used alcohol	.13	-.13
14) Requested branch / duty / service period	-.12	-.43
15) Reported sleeping disorders (d)	.11	.33
16) Received enough information about conscription	.10	-.11

Note. Variables are ordered by stepwise inclusion in the model. (S) = scale. (d) = computed as a dummy variable. GPA = grade point average. Wilk's Lambda = .74; Eigenvalue = .33; Canonical Correlation = .50; n = 1,770.

Table 6
Predicting attrition and completion group membership using discriminant analysis (classification results)

		Predicted Group	
Actual Group	Attrition	Completion	Total
Attrition	81 (47.1)	91 (52.9)	172 (100)
Completion	46 (2.8)	1,569 (97.2)	1,615 (100)

Note. First number in each cell is the n; second number, in parentheses, is the percentage based on the row total. 92.3% of original grouped cases were correctly classified; n = 1,787.

Table 6 portrays the success of the discriminant function in predicting membership in the attrition group or completion group, with the diagonal cells representing prediction successes and the off-diagonal cells representing misclassification or prediction failures. The function does a reasonably good job in that of those it would have predicted would attrit (n = 127), a large number (n = 81) did attrit versus those who did not (n = 46). On the other hand, a large number

(n = 91), although small percentage, attritted from those the discriminant function predicted would complete their service. The challenge for attrition research is not in predicting the diagonal cell entries but in understanding the off-diagonal cell entries, i.e., how does a person complete service when it is predicted that the person will attrit (n = 46) or why does a person attrit when it is predicted that the person will complete their service obligation (n = 91). The balance between whether a military service allows in more or fewer members whom they predict will attrit in order to keep those that succeed despite that prediction is a matter for economics and policy.

The discriminant analysis procedure is particularly appropriate for use with a set of interval or ratio level continuous predictor variables. With nominal level, categorical predictor variables, log-linear regression is better suited. Rather than determining the variables and their strength that discriminate states of the dependent variables, log-linear analysis determines the impact of a predictor variable by how it changes the odds of a dependent variable state occurring, i.e., attrition group membership. A log-linear analysis of the data resulted in a set of variables for the model similar to the set for discriminant analysis. These important predictor variables included the scales Sense of Military Obligation, Physical Health, and expected Military Adjustment as well demographic and background variables such as age, marital status, education level attained, and criminal background (see Table 7). The figures in the column "Exp(β)" indicate the increase or decrease that one unit of the predictor variable would have on the odds of membership in the attrition group, with a value of 1 (50/50 odds) indicating no change. For example, the Exp (β) of Sense of Military Obligation indicates that a unit change of plus 1 on the scale would decrease the odds of attrition by 55/100ths. Likewise, those who *only finished comprehensive school* had about two (1.99) times the risk of attrition. Because of small frequencies in certain variable responses, not all odds ratios are statistically significant. In the note to Table 7 are some statistics which estimate the portion of variance explained in the dependent variables (Cox & Snell R square = .19; Nagelkerke R square = .41) and how well the model fits the data (-2 Log Likelihood = 745.76, where a much smaller figure would be desirable). In terms of classification, the model would correctly classify about 93% of the cases, with (first row cells, see Table 8) 64 persons being predicted as attritees who attritted, 107 persons predicted as completion group members who attritted, (second row of cells) 19 members who were predicted to attrit but who completed service, and 1,580 who were predicted to complete their service and did so. Overall the model is neither particularly good nor bad but is useful for identifying the most important variables under the log-linear approach.

The survival or hazard analysis approach (Cox regression) is useful for looking at the occurrence of an event such as attrition in a sample over time. Note that using time until the event occurs as the dependent variable is different from using membership in the attrition group or completion group as the dependent variable as was done in the discriminant function and log-linear statistical approaches. Nevertheless, the survival analysis model (presented in Table 9) produced similar results. The scales Sense of Military Obligation, Physical Health, Expected Military Adjustment were important along with certain demographic variables, educational attainment, criminal history, and the existence of problems. In a sense, the other two statistical models were predicting attrition whereas this Cox regression model was predicting length of military service. One would expect that the variables that enhance or predict success are not necessarily the same as those that predict lack of success, i.e., attrition.

Table 7
Log-linear regression analysis for attrition and completion groups

Variables in the Model	Explained Variance	β	Sig.	Exp (β)
1) Sense of Military Obligation (S)	.18	- .59	.000	.55
2) Only finished comprehensive school (d)	.25	.69	.002	1.99
3) Physical Health (S)	.29	- .22	.069	.80
4) Was charged with offence as civilian (d)	.32	.88	.001	2.40
5) Requested longer period of service (d)	.34	-1.07	.000	.35
6) Had one or more loans (d)	.36	.51	.013	1.66
7) Engaged (d)	.37	.96	.002	2.62
8) Had lived in many places	.38	.25	.003	1.28
9) Finished high school (d)	.39	- .97	.001	.38
10) Age	.40	.24	.007	1.27
11) Reported sleeping disorders (d)	.40	.46	.025	1.59
12) Military Adjustment (S)	.41	- .33	.040	.72
13) Had no job; not in school (d)	.41	.43	.047	1.54

Note. Variables are ordered by stepwise inclusion in the model. (S) = scale. (d) = computed as a dummy variable. Explained variance is by Nagelkerke R^2. Cox & Snell $R^2 = .19$; -2 Log likelihood = 745.76; n = 1,770.

Table 8
Predicting attrition and completion group membership using log-linear regression (classification results)

		Predicted Group	
Actual Group	Attrition	Completion	Total
Attrition	64 (37.4)	107 (62.6)	171 (100)
Completion	19 (1.8)	1,580 (98.8)	1,599 (100)

Note. First number in each cell is the n; second number, in parentheses, is the percentage based on the row total. 92.9% of original grouped cases were correctly classified; n = 1,770.

Table 9

Cox regression analysis for attrition and completion groups

Variables in the Model	β	Sig.	Exp (β)
1) Sense of Military Obligation (S)	- .54	.000	.58
2) Was charged with offence as civilian (d)	.78	.000	2.19
3) Military Adjustment (S)	- .29	.004	.75
4) Finished high school (d)	- .91	.000	.40
5) Requested shorter period of service (d)	1.06	.000	2.90
6) Age	.22	.001	1.25
7) Had one or more loans (d)	.44	.008	1.55
8) Finished only comprehensive school	.43	.016	1.54
9) Had no job; not in school (d)	.38	.023	1.47
10) Engaged (d)	.60	.007	1.81
11) Reported sleeping disorders (d)	.39	.025	1.48
12) Father was unemployed (d)	.54	.045	1.72

Note. Variables are ordered by stepwise inclusion in the model. (S) = scale. (d) = computed as a dummy variable. -2 Log likelihood = 2161.57; n = 1,771.

Discussion

In all, the results in this research are similar to the picture presented in much of the prior research, i.e., that the risk of attrition is increased for service members who have only limited schooling, some physical health problems, signs of mental health difficulties or substance abuse, lower aptitude and motivation, a history of behavior problems in school or with the legal system, and who are older or very young compared to their peers. The major difference in the current research is that, because the sample was from a nation with conscript service, attitudes toward conscript service and a service member's sense of military obligation were of significant importance to attrition. Further, the findings imply that, in research on attrition, questionnaires or interviews should be used to obtain personality and attitude information if the study is going to have much chance of obtaining effective and useful results.

Three different statistical approaches were used in the analyses with the goal of finding the major kinds of variables that predict or explain attrition. These three approaches could have provided three different pictures of the key kinds of variables, but they did not. The similarity of results suggest that the findings were not statistical artifacts but, rather, due to a common underlying picture seen through three different lenses. The three approaches showed that a combination of known (or suspected) demographic risk variables and certain types of attitudinal and personality variables are all needed for effective models of attrition. Additional implications in terms of methods are that the similarity of results suggests that one can be flexible in statistical approach and flexible in how one measures the variables, allowing for research design efficiency without losing effectiveness or creating statistical artifacts that might unduly bias the results.

Of course, there is still room for improvement in attrition research, especially in terms of articulating the optimal set of attitudinal and personality variables. In the current research, many of these kinds of variables were partially redundant with a conscript's Sense of Military

Obligation. Future research should try to measure sense of obligation in a more independent manner or with a scale less redundant with other variables. The specific scale used in the current research will most likely be less effective with volunteer militaries. Additionally, the dominance of the sense of military obligation in this sample of conscripts highlights the value of cross-national research to point out what appears similar and what appears to be unique for different nations. It shows that most of the same kinds of variables related to attrition are common across, for example, U.S., Israeli, and Finnish service members, although some kinds of variables are relatively more important depending on the military personnel manning system. These cross-national comparisons between conscript and non-conscript systems have implications for decisions on using or not using a military draft and for the attention needed to "sell" new recruits on their military obligation or the value of their service.

Despite the general similarity of findings, knowledge of the stronger predictors, and the extensive amount of research on attrition, the cumulative success of attrition research has been only modest. The use of many predictor variables, large samples, and several analytic techniques still only permits the explanation of perhaps 30%-40% of the variance. Put another way, the use of models with a large number of predictor variables still predicts attrition for (misclassifies) a substantial percentage of the high-risk cases who will complete their service training or tour of duty and fails to identify many low-risk cases who will attrit. This modest success suggests that either the research is a) missing one or more individual level predictor variables (e.g., possibly some aspect of organizational commitment, sense of meaning of military service for the service member, the extent to which the service member is just trying out the military as a possible employer, and social influences such as from other conscripts or from girlfriends or boyfriends), or b) focusing on the wrong unit of analysis or not incorporating enough levels of analysis (e.g., possibly an added unit of analysis might be the persons, organizations, and their policies that make the decision that a service member should be separated rather than using the service member and his or her shortcomings as the sole unit of analysis), or c) not likely to capture a more detailed explanation for what is essentially a random event resulting from multitudinous interacting factors (e.g., as in the weather in Europe being influenced by a butterfly flapping its wings in Asia). If the latter is the case, then further attrition research would be better focused on adjustment to the military or on designing and evaluating the effectiveness of new or improved programs or treatments to enhance adjustment rather than trying to identify more precisely the factors causing attrition. On a positive note, many of the predictor variables associated with attrition such as Sense of Military Obligation and expected Military Adjustment are ones that good leaders can influence. It is likely therefore that programs to reduce attrition should include specific tools to use and insights for leaders on how they can make a positive contribution to prevent attrition.

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