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Families Under Stress

An Assessment of Data, Theory, and Research on Marriage and Divorce in the Military

Benjamin R. Karney, John S. Crown

Prepared for the Office of the Secretary of Defense

Approved for public release; distribution unlimited

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The research described in this report was prepared for the Office of the Secretary of Defense (OSD). The research was conducted in the RAND National Defense Research Institute, a federally funded research and development center sponsored by the OSD, the Joint Staff, the Unified Combatant Commands, the Department of the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community under Contract DASW01-01-C-0004.

Library of Congress Cataloging-in-Publication Data

Karney, Benjamin R.
Families under stress : an assessment of data, theory, and research on marriage and divorce in the military / Benjamin R. Karney, John S. Crown.
p. cm.
Includes bibliographical references.
ISBN-13: 978-0-8330-4145-6 (pbk. : alk. paper)
1. Military spouses—United States. 2. Soldiers—Family relationships—United States. 3. Divorce—United States. I. Crown, John S. II. Title. III. Title: Assessment of data, theory, and research on marriage and divorce in the military.

UB403.K36 2007
306.8088'35500973—dc22

2007011014

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Published 2007 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-2665
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Preface

Since the onset of the military operations in Afghanistan and Iraq, the demands on the military have been higher than they have been at any time since the Vietnam War. In particular, deployments, especially for the Army and the Marine Corps, have been longer, more frequent, and more dangerous than they have been in the past. In the summer and fall of 2005, briefings delivered to Dr. David Chu, Undersecretary of Defense for Personnel and Readiness, raised concerns that these lengthy separations were leading to rising divorce rates among military families. Those concerns, in turn, raised broader questions about the effects of military service on military marriages and about the most effective ways of addressing the needs of military families.

The overarching goal of the research and analyses described in this monograph is to provide an empirical and theoretical foundation for discussions of these issues. In pursuit of this goal, we ask three questions. First, what has the accumulated research and theory on military marriages contributed to an understanding of how and why military marriages succeed or fail? To address this question, we reviewed the existing theoretical and empirical literature on military marriage, identifying the strengths and limitations of this literature for understanding the effects of deployment on marriages in the current environment. Second, how have rates of transition into and out of marriage within the military changed since the onset of the global war on terror? To address this question, we drew on the last ten years of service personnel records (i.e., five years before and after the attacks of 2001) to estimate trends in marriage and marital dissolution for the active and reserve

components. Third, how does the length of time deployed affect the likelihood that a married service member will subsequently end his or her marriage? To address this question, we linked service record data to data on individual deployments to Afghanistan and Iraq. The monograph concludes by identifying priorities for future research on these issues.

The analyses described in this monograph are meant to be understood and used by a wide audience. Thus, the monograph may be of interest to the military services, the Office of the Secretary of Defense, individual service members and their families, members of Congress and their staff, and the media. It may also interest foreign militaries that have converted to a volunteer system and that want to be informed about the effects of a high operating tempo on military families.

This research was sponsored by the Office of the Under Secretary of Defense for Personnel and Readiness and conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Department of the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community.

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Contents

Preface iii
Figures xi
Tables xv
Summary xvii
Acknowledgments xxxv
Abbreviations xxxvii

CHAPTER ONE
Introduction 1
The Implications of Marriage for the Military 2
The Implications of the Military for Marriage 4
  The Stress Hypothesis 4
  The Selection Hypothesis 5
Overview of the Monograph 7

CHAPTER TWO
Developing Models of Military Marriage 9
Marital Outcomes: Distinguishing Between Dissolution and Satisfaction 11
Marital Dissolution: Forming and Ending Marriages 12
Marital Satisfaction: Maintaining Marriages 14
  Significance of Marital Satisfaction 14
  Perspectives on Marital Satisfaction 15
  Integrative Models of Civilian Marriage 18

Key Elements for Models of Success and Failure in Military Marriages 19
Enduring Traits 19
Emergent Traits 21
Relationship Resources 22
The Military Context 23
Nonmilitary Circumstances 24
Adaptive Processes 24
Barriers and Alternatives 25
An Integrative Framework to Account for the Success and Failure of Military Marriages 27

CHAPTER THREE
Review of Empirical Research on Military Marriages 33
The Scope of This Review 35
Limitations of the Existing Literature: On Methods for Studying Military Marriages 36
Reliance on Self-Report Data 36
Reliance on Cross-Sectional Data 37
Reliance on Data from Individuals 37
Unwarranted Assumption of Homogeneity 38
Infrequent Acknowledgment of Cohort Effects 38
Lack of Model Testing 39
Enduring Traits and Characteristics 40
Emergent Traits 41
Relationship Resources 43
Military Experiences 46
The Selection Hypothesis: Does the Military Promote Premature Marriage? 47
The Sequence and Timing Hypothesis: Does Military Service Disrupt the Life Course? 49
The Stress Hypothesis: Do the Demands of Military Service Damage Marriages? 50
The Trauma Hypothesis: Does Military Service Create Less-Fit Spouses? 54
The Benefits of Military Service for Marriage 57

Nonmilitary Circumstances 58
Financial Stress and Spouse Employment 58
Housing 59
Access to Services 60
Separation from Friends and Family 61
Discussion 61
Adaptive Processes 62
Barriers and Alternatives 64
Summary and Conclusions 65

CHAPTER FOUR
Trends in Marriage and Divorce: Reanalyzing Military Service Personnel Records 69
Problems in Existing Data on Marriage and Divorce in the Military 69
Overview of Trend Analyses 72
Methods 73
The Data Set 73
Defining Marital Status Categories 74
Patterns and Trends in Marriage Within the Active Component 75
Percentage Married 75
Marital Status upon Accession 78
Rates of First Marriage While in the Service 82
Discussion: Marriage in the Active Military 87
Patterns and Trends in Marital Dissolution Within the Active Component 90
Rates of Marital Dissolution 90
Dissolution in Dual-Military Marriages 96
Discussion: Marital Dissolution in the Active Component 100
Patterns and Trends in Marriage and Marital Dissolution Within the Coast Guard 103
Percentage Currently Married 104
Marital Status upon Accession 104
Rates of First Marriage While in the Service 105
Marital Dissolution 106
Discussion 108

Patterns and Trends in Marriage and Marital Dissolution Within the Reserve Component 108
Percentage Married 109
Rates of First Marriage While in the Service 113
Rates of Marital Dissolution 117
Discussion: Marriage and Marital Dissolution in the Reserve Component 122
Patterns and Trends in Marriage and Marital Dissolution Within the National Guard 123
Percentage Married 123
Rates of First Marriage While in the Service 125
Rates of Marital Dissolution 128
Discussion: Marriage and Marital Dissolution in the National Guard 131

CHAPTER FIVE
Evaluating Alternative Explanations for Rising Rates of Marital Dissolution in the Military 133
Hypothesis No. 1: Coding Errors in the DMDC Database 134
Hypothesis No. 2: Policy Changes Affecting Active Army Officers 136
Hypothesis No. 3: Changes in Health Insurance Policy in 2002 137
Hypothesis No. 4: Demographic Changes in Response to the Threat of Deployment 140
Conclusion 145

CHAPTER SIX
The Direct Effects of Deployments on Marital Dissolution 147
Methodological Issues 147
Modeling Deployment Effects 149
Deployment Effects in the Active Component 150
Deployment Effects in the Reserve Component 153
Deployment Effects in the National Guard 155
Discussion of Deployment Effects 157

CHAPTER SEVEN
Conclusions and Future Directions for Research and Policy 161
Summary 162
General Discussion 165
Priorities for Future Research on Military Marriages 167
Implications for Supporting Military Marriages 172

APPENDIX
Marriage and Marital Dissolution Tables 177

References 189

Figures

S.1. An Integrative Framework to Account for Success and Failure in Military Marriages xxvi
2.1. An Integrative Framework to Account for Success and Failure in Military Marriages 28
4.1. Percentage Married Across All Active Services 76
4.2. Percentage Married in the Active Army 76
4.3. Percentage Married in the Active Navy 77
4.4. Percentage Married in the Active Air Force 77
4.5. Percentage Married in the Active Marine Corps 78
4.6. Percentage Married upon Accession Across All Active Services 79
4.7. Percentage Married upon Accession, Active Enlisted Women 80
4.8. Percentage Married upon Accession, Active Enlisted Men 81
4.9. Percentage Married upon Accession, Active Female Officers 81
4.10. Percentage Married upon Accession, Active Male Officers 82
4.11. Percentage Entering First Marriage Across All Active Services 83
4.12. Percentage Entering First Marriage in the Active Army 84
4.13. Percentage Entering First Marriage in the Active Navy 85
4.14. Percentage Entering First Marriage in the Active Air Force 85
4.15. Percentage Entering First Marriage in the Active Marine Corps 86

4.16. Rates of Marital Dissolution Across All Active Services 91
4.17. Rates of Marital Dissolution by Gender and Rank Across All Active Services 92
4.18. Rates of Marital Dissolution in the Active Army 93
4.19. Rates of Marital Dissolution in the Active Navy 93
4.20. Rates of Marital Dissolution in the Active Air Force 94
4.21. Rates of Marital Dissolution in the Active Marine Corps 94
4.22. Rates of Dual-Military Marriage Across the Active Services .. 97
4.23. Rates of Marital Dissolution in Dual-Military Marriages and Marriages to Civilians, Active Enlisted 98
4.24. Rates of Marital Dissolution in Dual-Military Marriages and Marriages to Civilians, Active Officers 99
4.25. Comparing Rates of Marriage and Marital Dissolution in the Active Military 101
4.26. Percentage Married in the Coast Guard 104
4.27. Percentage Married upon Accession in the Coast Guard 105
4.28. Percentage Entering First Marriage in the Coast Guard 107
4.29. Rates of Marital Dissolution in the Coast Guard 107
4.30. Percentage Married Across All Reserve Component Services 110
4.31. Percentage Married in the Army Reserve 111
4.32. Percentage Married in the Navy Reserve 111
4.33. Percentage Married in the Air Force Reserve 112
4.34. Percentage Married in the Marine Corps Reserve 112
4.35. Percentage Entering First Marriage in the Reserve Component 113
4.36. Percentage Entering First Marriage in the Army Reserve 114
4.37. Percentage Entering First Marriage in the Navy Reserve 115
4.38. Percentage Entering First Marriage in the Air Force Reserve 115
4.39. Percentage Entering First Marriage in the Marine Corps Reserve 116
4.40. Rate of Marital Dissolution Across All Services of the Reserve Component 118
4.41. Rates of Marital Dissolution in the Army Reserve 119
4.42. Rates of Marital Dissolution in the Navy Reserve 119
4.43. Rates of Marital Dissolution in the Air Force Reserve 120
4.44. Rates of Marital Dissolution in the Marine Corps Reserve .. 120
4.45. Percentage Married Across All National Guard Services 124

4.46. Percentage Married in the Army National Guard 124
4.47. Percentage Married in the Air National Guard 125
4.48. Percentage Entering First Marriage in the National Guard 126
4.49. Percentage Entering First Marriage in the Army National Guard 127
4.50. Percentage Entering First Marriage in the Air National Guard 127
4.51. Rates of Marital Dissolution Across All Services of the National Guard 128
4.52. Rates of Marital Dissolution in the Army National Guard 129
4.53. Rates of Marital Dissolution in the Air National Guard 130
5.1. Rates of Dual-Military Marriage Across the Active Services 138
5.2. Percentage Married Across All Active Services 139
5.3. Rates of Marital Dissolution in Dual-Military Marriages Among Active Enlisted Service Members 139
5.4. Rates of Marital Dissolution in Dual-Military Marriages Among Active Officers 140
5.5. Age of Active Army Members, 1996–2005 142
5.6. Age of Married Active Army Members, 1996–2005 142
5.7. Age of Married Active Navy Members, 1996–2005 143
5.8. Age of Those in the Active Army Entering Marriage for the First Time, 1996–2005 144

Tables

6.1. Survival Analysis Results for the Active Component 151
6.2. Survival Analysis Results for the Reserve Component 154
6.3. Survival Analysis Results for the National Guard Component 156
A.1. Percentage Married in the Active Military 178
A.2. Percentage Married upon Accession in the Active Military 179
A.3. Rates of Entering First Marriage in the Active Military 180
A.4. Rates of Marital Dissolution in the Active Military 181
A.5. Percentage Married in the Military Reserves 182
A.6. Rates of Entering First Marriage in the Military Reserves ... 183
A.7. Rates of Marital Dissolution in the Military Reserves 184
A.8. Percentage Married in the National Guard 185
A.9. Rates of Entering First Marriage in the National Guard 186
A.10. Rates of Marital Dissolution in the National Guard 187

Summary

Since the initiation of military operations in Afghanistan and Iraq, demands on service members are higher than they have been in several decades. Deployments have been more widespread, longer, and more frequent, a higher proportion of deployed service members have been exposed to combat, and casualty rates are higher than at any other time since Vietnam.

The sustained high tempo of current operations has raised concerns about the effects that these demands may be having on service members and their families. In particular, reports in the press and elsewhere have suggested that the extended deployments leave military marriages vulnerable to divorce. In a recent example, the *New York Times* stated on its front page that "Military deployments have a way of chewing up marriages, turning daily life upside down and making strangers out of husbands and wives" (Alvarez, July 8, 2006). In surveys and qualitative studies, spouses of service members strongly endorse this view, describing their belief that the demands of military service, and deployments in particular, lead to divorce. The assumption behind such statements is that the stresses associated with lengthy deployments (e.g., financial difficulties, anxiety about loved ones in combat, challenges communicating) interfere with spouses' efforts to maintain their relationships, damaging marriages that would have remained satisfying and fulfilling in the absence of military stress. From this premise, it follows that divorce rates among military marriages should rise whenever the demands on the military increase. Throughout this monograph, we refer to this idea as the *stress hypothesis*.

Evaluating the effects of stress on military marriages is a key issue for military leaders, for several reasons. First, the majority of service members, both male and female, are married, and marriage rates among service members exceed rates for comparable civilians. Thus, trends that affect military marriages affect the majority of the armed forces. Second, the weight of the existing evidence suggests that the marriages of service members have direct effects on performance and retention. Thus, trends that lead to the deterioration of military marriages may have significant implications for national security. Developing effective policies and programs that support military families requires accurate data on how these families have responded to the demands of recent operations in Afghanistan and Iraq.

Goals and Approach of the Monograph

The overarching goal of this monograph is to inform discussions of the current needs of military families by evaluating the existing empirical support for the stress hypothesis. We pursue this goal in two ways. First, we review the prior research literature on military marriages, focusing on research that has attempted to explain how military marriages succeed and fail. Second, we examine data on transitions into and out of marriage assembled from service personnel records, estimating trends over the past ten years and the direct effects of deployment on subsequent risk of marital dissolution.

Prior Research on Stress and Military Marriage

No one disputes that military service is stressful for families, and research drawing from surveys and focus groups has described these stresses in detail. These include "risk of injury or death, geographic mobility, periodic separation of the service member from the rest of the family, long working hours and shift work, residence in foreign countries, and normative pressures controlling behavior outside of working time" (Segal, 1989, p. 7). A number of qualitative and survey studies

have examined the stresses associated with deployments in particular, noting that each stage of the deployment cycle (notification and preparation, separation, and reunion) is associated with unique and severe demands on military couples.

Yet despite the thoroughness with which the demands of military service and deployment have been described, evidence that these demands account for negative outcomes in military marriages remains sparse. The strongest evidence in support of the stress hypothesis comes from interviews and surveys of military spouses. When these spouses are asked to describe their beliefs about the effects of military service on their marriages, they suggest that the strains of military life hinder their efforts to maintain their relationships (e.g., by minimizing opportunities for intimacy, by preventing effective problem-solving, by creating new problems to solve), thereby leading to negative outcomes in marriages that might otherwise have avoided problems.

However, evidence that military stress actually accounts for problems in military marriages has been hard to come by. For example, two independent analyses of data on Vietnam veterans (Call and Teachman, 1991 and Zax and Flueck, 2003) found that, controlling for age at marriage, divorce rates for those who served during that war did not differ from the rates for those who did not serve. And Bell and Schumm (2000) commented:

> Although the public associates deployments with high divorce rates, there is no direct evidence that deployments cause divorce. . . . Accordingly, any relationship between deployments and subsequent divorce may be an artifact of self-selection or predeployment conditions. (p. 146)

Estimating Trends in Marital Dissolution from Service Personnel Records

Methodological limitations in prior research may have prevented an adequate examination of the stress hypothesis. Surveys, for example, rely on respondents who volunteer to participate, resulting in data that may not generalize to the military as a whole. Moreover, because

the current demands on the military are unprecedented, results from research on the military in prior decades may not hold true for the military of today.

To overcome these limitations, we assembled and analyzed a new data set describing transitions into and out of marriage among the entire military population over the past ten years. Data on the marital status of service members are contained in service personnel records. Each service maintains these records in an idiosyncratic way, but the services send monthly extracts of their records to the Defense Manpower Data Center (DMDC), where the data are processed into forms that can be analyzed. For this project, we asked DMDC to generate quarterly summaries of the monthly extracts, beginning with the first quarter of fiscal year (FY) 1996 and ending with the last quarter of FY2005. Unlike the surveys that have informed most research on stress and military marriage to date, these summaries include marital status data on every person who has served in the United States Armed Forces over the past decade, a population of over 6 million individuals.

To evaluate how trends in marital dissolution among military couples may have changed since the onset of military operations in Afghanistan and Iraq, we estimated the number of service members who indicated a change of status from married to dissolved in each fiscal year and divided it by the total number of married service members at the start of that year. We estimated these dissolution rates separately for each service in the active and reserve components, and separately for each rank and gender within each service.

The stress hypothesis predicts that the beginning of the recent military operations in FY2002 should coincide with a rise in rates of marital dissolution and that rates of dissolution among military marriages should have been higher in recent years, when demands on the military were relatively high, than in the earlier part of the past decade, when demands on the military were relatively low.

In fact, data from the past ten years of service personnel records provide little support for either of these predictions. In the active component, for example, rates of marital dissolution changed most abruptly in the two years prior to FY2001. Throughout the services and across rank and gender, the change was the same: After peaking in FY1999,

rates of dissolution fell sharply to a five-year low in FY2000. Since FY2001, however, change in rates of marital dissolution has been more gradual. In the Army, Air Force, and Marines, rates of marital dissolution indeed rose steadily from FY2001 to FY2005, but the effect of this rise has been merely a return to rates similar to those observed in FY1996, when the demands on the military were measurably lower than in recent years. In the Navy, rates of marital dissolution increased sharply in the first years after FY2001 but have declined in the last two years. As with the other services, the Navy's rates of dissolution in FY2005 resembled those of FY1996. Trends in the reserve components show a similar pattern. To summarize, service record data from the past ten years do not demonstrate the high rates of marital dissolution that are predicted by the stress hypothesis.

More-detailed analyses of these records highlight two noteworthy patterns that hold true across all services and components. First, the marriages of female service members are at several times higher risk of dissolving than are the marriages of male service members. Female service members are also far more likely to be married to other service members (about 50 percent of women compared to less than 10 percent of men), but this does not account for the difference in dissolution rates. Second, the marriages of enlisted members are at higher risk than are the marriages of officers. This is mostly likely due to the fact that officers tend to be older, and age is positively associated with the likelihood of a marriage remaining intact.

Estimating the Effects of Time Deployed on Subsequent Risk of Marital Dissolution

These trends reveal that, over a period when demands on the military have increased markedly, rates of marital dissolution have increased only gradually. Yet analyses of trends may be misleading because they do not directly assess rates of marital dissolution among service members whose marriages may be most at risk—i.e., those who have been deployed to Afghanistan and Iraq. To address the effects of deployment on marital dissolution, we drew upon longitudinal data to track the

marital status of individual service members before, during, and after their deployments while controlling for other demographic variables likely to be associated with risk of marital dissolution (e.g., gender, race, age at marriage).

For our analyses, we drew from the quarterly personnel summaries provided by DMDC to create a longitudinal data set that linked information from individual service members across quarters. This file was then linked with a separate file provided by DMDC that contained deployment histories for all service members deployed since FY2002 when the current operations began. Although we could have analyzed the data in terms of either incidence of deployment or cumulative number of days deployed, we decided to examine the cumulative days deployed, to account for possible differences between longer or shorter deployments. To control for prior marital status, we conducted analyses only on individuals who entered into marriages after the current operations began. The result was a file containing data from 48 consecutive quarters that allowed us to map, from FY2002 through FY2005, the timing and cumulative length of time spent deployed against the timing of individual marriages and marital dissolutions.

We examined the new data set with multiple-spell discrete-time survival analyses (see Willett and Singer, 1995). This approach had several benefits. First, survival analyses account for the timing of the dependent variable—that is, whether or not those service members who were married during their deployments experienced a marital dissolution subsequent to their deployments. Second, the approach allowed us to account for the cumulative effects of longer or shorter periods of deployment. Third, it allowed us to ensure that individuals were matched on their marital duration in all analyses—i.e., that the analyses evaluated risk of dissolution for individuals taking into account how long they had been married. We ran separate analyses on data from married enlisted members and married officers in each of the services of the active and reserve components.

The stress hypothesis predicts that married service members who are deployed will be at higher risk for dissolving their marriages when they return, compared with married service members who are not

deployed. Moreover, the stress hypothesis suggests that longer deployments should be more damaging to marriages than shorter ones.

In fact, our analyses find support for the stress hypothesis only among members of the active Air Force. In that service, among enlisted members and officers, the more days that married service members spent deployed, the greater their risk of dissolving their marriages after they returned. In no other service could we observe the predicted effect of time deployed on risk of dissolution. On the contrary, for enlisted members in the active Army, Navy, and Marines, and for officers in the active Navy and Marines, the longer that a service member is deployed while married, the lower the subsequent risk of marital dissolution. The same significant effect was observed among enlisted members and officers in the Army Reserve, officers in the Navy Reserve, enlisted members of the Air Force Reserve, and all ranks of the Army and Air National Guard. In these groups, deployment appears to enhance the stability of the marriage, and the longer the deployment, the greater the benefit.

Understanding the Effects of Military Service and Deployment on Military Marriages

Despite the demonstrable stresses associated with military service and deployment and the widespread assumption that these stresses lead to the deterioration of military marriages, our analyses revealed little support for the stress hypothesis. How can we explain the apparent disjunction between the data and popular belief? We offer several possible explanations.

First, news reports of the drastic increase in military divorces may have been based on data from the active Army in FY2004. During that year, estimated rates of dissolution, reported to the Under Secretary of Defense for Personnel and Readiness in 2005 and confirmed in this monograph, were in fact disproportionately high for male and female officers, so high that estimates for the Army as a whole appear elevated for that year even though there were no comparable elevations among enlisted members. However, dissolution rates among active Army offi-

cers returned to normal levels in FY2005. In addition, increases of comparable magnitude were not observed in any other service. Furthermore, discussions with staff at DMDC suggest that the FY2004 data for active Army officers may contain unidentified errors. Thus, the impression that the military has experienced spikes in rates of marital dissolution may be based on a single faulty data point.

Second, service members and military leaders may be aware of costs to military service and deployment that were unmeasured in the data examined here. For example, service records contain data on marital dissolution only while service members remain in the service. To the extent that service members leave the military before dissolving their marriages, these analyses would underestimate the link between deployment and marital dissolution. Alternatively, deployment may affect other family outcomes besides dissolution—e.g., marital quality and child outcomes—that are not addressed by service records. Deployment may be analogous to the transition to parenthood: an expected, stressful event that reduces the quality of marriages even as it increases the likelihood that the marriage will remain intact.

Third, there may be negative consequences to highly salient experiences during deployment, even though these experiences are relatively rare. For example, although prior research has found few consistent effects of deployment on marital outcomes, research on combat exposure and traumatic experiences while deployed has found the expected effects. For example, although service in the Vietnam War has not been associated with higher rates of divorce, those who had greater exposure to combat during their service in that war also experienced higher rates of marital problems after their service. Using retrospective life-history data from the National Survey of Families and Households, Ruger, Wilson, and Waddoups (2002) estimated that, controlling for background and period of service, the experience of military combat in any war between 1930 and 1984 increased the risk of subsequent marital dissolution by 62 percent. Thus, whereas any deployment is stressful, it may only be exposure to combat that has the lasting effects on service members that lead to the deterioration of marriages. Yet, in popular opinion, deployment and exposure to combat may be conflated.

Fourth, deployment may in fact be increasing the risk of marital dissolution for military couples who were married prior to the onset of military operations in Afghanistan and Iraq. To control for differences in marital duration, we examined the direct effects of deployment only for those couples who married after FY2002, the period for which detailed deployment data were available. All of these couples knew that the deployments in Afghanistan and Iraq were under way, and they may have expected and prepared for them. In contrast, couples who were married prior to the terrorist attacks of September 2001 may not have expected the increased demands they have faced since that date. These couples, omitted from the analyses described here, may be the ones most negatively affected by deployments.

Finally, it may simply be that deployment, for all of its negative aspects, has positive aspects as well. For example, focus groups exploring the effects of deployment on service members indicate that many service members find deployments meaningful and fulfilling. Time spent deployed provides some service members with a sense of using their training to further an important national goal, in contrast to time spent serving at home. For those considering a career in the military, deployments provide opportunities for advancement that are unmatched by opportunities available while serving at home. More concretely, being deployed is associated with a higher level of pay and thus a higher level of family income, and this holds true for both the active and reserve components. Although the data available in service personnel records do not allow a direct assessment of the relative costs and benefits accumulated by individual members, the overall pattern of results suggests that, for the majority of deployed service members, the concrete benefits of deployment may compensate for the emotional costs.

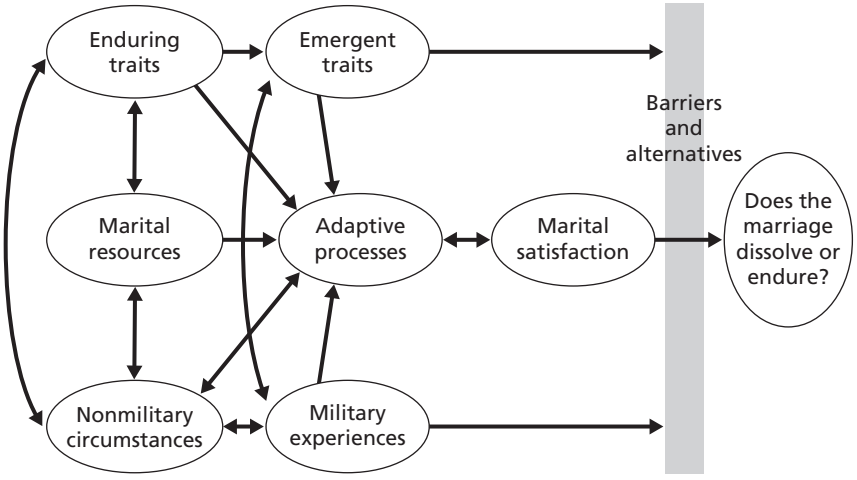
Toward a Broader Theory of the Success and Failure of Military Marriages

The lack of support for the stress hypothesis begs a question: If not stress, then what may account for the success and failure of military

marriages? To address this question, we drew upon existing models developed from research on civilian marriages and modified them to include elements relevant for understanding military marriages (see Figure S.1).

The model moves beyond the stress hypothesis in several ways. First, it accounts for the qualities that military spouses bring to their marriages (enduring traits), as well as permanent changes in personality or psychopathology that may develop as a response to military service (emergent traits). Second, it accounts not only for experiences within the military, but also for nonmilitary circumstances (e.g., access to affordable housing, spousal employment, health of family members) that may make the demands of military service easier or harder to bear. Third, it suggests that all of these variables affect marriages through their direct effects on adaptive processes within the couple, i.e., how spouses interact, communicate, resolve problems, and provide each other with support. Finally, it acknowledges that spouses' satisfaction with their marriage is but one predictor of whether or not a marriage

Figure S.1
An Integrative Framework to Account for Success and Failure in Military Marriages



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will remain intact; barriers and a lack of alternatives can keep spouses in a marriage whether or not they find the marriage satisfying.

Evidence for Selection Effects on the Dissolution of Military Marriages

One implication of the model described above is that military marriages may be at increased risk of dissolution simply because the military tends to recruit people from relatively high-risk populations and then provides incentives that encourage them to marry. To the extent that divorce rates are increasing in recent years, this perspective suggests that, in the face of impending deployments, some service members may enter marriages that they might not have entered otherwise, and these marriages are at greater risk of subsequent dissolution regardless of the stress they experience. Throughout this monograph, we refer to this alternative perspective as the *selection hypothesis.*

Several kinds of evidence offer support for the selection hypothesis as an explanation for fluctuating rates of marital dissolution in the military. First, demographic and sociological research on military families suggests that military marriages may be highly vulnerable to adverse marital outcomes independent of the stresses of military service. For example, although the most vulnerable individuals (e.g., those with histories of substance abuse, psychopathology, or criminal behavior) are excluded from serving in the military, those who do enlist tend to be the most vulnerable of the eligible population in terms of age, ethnicity, and potential for career advancement in the civilian labor market. Once in the military, service members marry younger and have children sooner than their civilian counterparts. These relatively young couples must then confront financial stress, the likelihood of being separated from their families, and the challenge of finding affordable housing. Within civilian populations, all of these characteristics have been associated with an increased risk of divorce.

Second, some analyses suggest that the military, in attempting to become more supportive of families, may have inadvertently created incentives that encourage couples to marry (e.g., Pexton and Maze,

1995), including more vulnerable couples who would not have married otherwise. A number of analyses indicate that marriage rates among service members are correlated with pay levels (e.g., Kostiuk, 1985) and that the benefits reserved for married personnel encourage marriages that might not have occurred in the absence of benefits (Zax and Flueck, 2003).

Third, in our analyses, changes in divorce rates over the past decade mapped closely onto changes in rates of entry into marriage over the same period. That is, both marriage and marital dissolution fell to low points in FY2000, and both marriage and marital dissolution have been climbing gradually since then. The stress hypothesis offers no reason to expect a close association between these rates because it focuses exclusively on processes that take place after marriage. The selection hypothesis, in contrast, predicts exactly the association that is observed in these data. That hypothesis explains rising rates of marital dissolution as a direct function of the rising rates of marriage observed in the same period. When the threshold for marrying a current partner is lowered by changes in the relative benefits of being married, more vulnerable couples get married, leading to higher rates of subsequent marital dissolution. The analyses described here do not offer direct support for this explanation, but they are more consistent with the selection perspective than with the stress perspective.

Strengths and Limitations of the Research

The primary strength of this research is that we analyzed not merely a sampling of service members but rather the entire population of military personnel over the past ten years, including both active and reserve components. We also took advantage of the longitudinal nature of service personnel records to examine how deployments affect individuals' risk of marital dissolution, a substantial advance over prior research on this issue. Yet, despite these strengths, the analyses were nevertheless limited in ways that constrain interpretations of these results. One significant limitation is the fact that service personnel records contain errors that we could not correct. DMDC knows of several errors, but

no catalogue exists that researchers drawing upon these records might refer to and add to as new errors are discovered. Thus, conclusions drawn from these data should be treated as suggestive rather than definitive.

Directions for Further Research

Our analyses indicate that commonly held theories of military marriage are incomplete and that the variables most crucial for understanding how military marriages respond to stress may yet have to be studied. In particular, many observers appear to have focused on the direct effects of stress on couples, overlooking the effects of supportive programs and institutions that may buffer the effects of stress. The integrative framework described here offers a broad context for understanding these effects, and all of the paths suggested by that framework are worthy of further examination. In particular, several relevant issues deserve to be priorities for future research.

Examine how military couples interact with each other and adapt to stress. Research on the interactions between spouses provides the foundation of all currently available marital education programs and curricula, yet this work has never been conducted on samples of military marriages. Thus, although it is widely assumed that the demands of military service inhibit effective interactions between military spouses, there is no evidence to support this assumption—indeed, it may be flawed or incomplete. Before the military invests in programs to promote effective adaptation in military marriages, a research base that addresses adaptive processes directly seems necessary.

Conduct longitudinal research. Many of the central unanswered questions about military marriages address issues of stability and change over time. For example, does the experience of deployment change the marriage, or are the outcomes of military marriages determined by factors in place prior to deployment? To date, there have been no longitudinal studies of military families capable of addressing such questions. Administrative data can be used to create longitudinal data sets, as we did for this monograph, but the variables contained in administrative

data are limited. Advancing our understanding of how military service affects military families requires research that, at minimum, assesses these families at the outset of their service, and then again at some point after their service has ended.

Expand the full range of relevant outcomes. To date, research on military marriage has focused almost exclusively on predictors of divorce and marital dissolution. The research reviewed in this monograph suggests that this focus is too narrow. For example, the decision to get married is a reasonable outcome to explain in itself because it might offer insights into the eventual outcomes of service members' marriages. Similarly, research on marriage and retention decisions suggests that it is the quality of the marriage, more than marital status, that accounts for the effects of marriage on retention (Vernez and Zellman, 1987). Further research on military marriage would be well served by taking this research into account and examining the quality of military marriages directly.

Address the marriages of female service members. One of the largest and most reliable effects revealed in this monograph is also one that has received a minimum of attention: Rates of marital dissolution are several times higher for female service members than for male service members, and this difference holds true across time, services, and ranks. Although women represent a smaller proportion of the military than men, these rates nevertheless represent a significant number of disrupted marriages. Supporting the marriages of female service members requires research that identifies the unique challenges that their marriages face.

Relate changes in military marriage to changes in policy. By themselves, analyses of service records provide no sense of the broader forces that affect rates of transitions into and out of marriage. A useful supplement to the empirical analyses described here would be a history of the social and institutional changes that have affected military couples over the same period. By mapping changes in rates of marriage and marital dissolution within the military onto changes in family policies and the broader economy, this contextual analysis could help identify the sources of the trends described in this monograph and thereby

highlight directions for future policies designed to shape those trends in desired ways.

Develop ways to compare civilian and military marriages. To help evaluate research on military marriages, researchers are often requested to compare results obtained with military samples to results obtained with comparable civilian samples. Fulfilling such requests is not straightforward, however, because there is no consensus among researchers about the dimensions on which military and civilian samples might be comparable. The best practices for conducting these comparisons are worthy of direct attention.

Exploit existing data sets. Although we observed several broad trends in marriage and marital dissolution across services of the military, specific patterns and trends also varied across ranks, services, and components. Moreover, the means reported in these analyses mask likely heterogeneity across variables not examined here, such as geographical location, job code within the military, and type of deployment. The variables that examine these potential sources of heterogeneity lie waiting in existing data sets, including the one assembled for this monograph, and these data sets are worth exploiting for several reasons. First, a more refined picture of vulnerability among military families will assist the military in allocating limited resources toward those families most likely to benefit from support. Second, analyses of existing data sets are a cost-effective way of addressing new questions without waiting for and paying for the collection of new data.

Implications for Supporting Military Marriages

Given that this monograph has highlighted the limitations of existing research on military marriages, specific recommendations for supporting these marriages must be considered tentative. Keeping this caveat in mind, the analyses described here and the accumulated research to date nevertheless have several implications for developing policies and programs to support military marriages.

Recruitment and eligibility policies are likely to affect rates of marriage and marital dissolution. A recurring theme in these analyses is

that the selection effect may be a powerful explanation for observed trends in marriage and marital dissolution in the military. Changes in the ways that the military recruits members, or changes in the criteria for who is eligible to serve, may therefore have implications for the sorts of people marrying within the military, the timing of those marriages, and their likelihood of ending in marital dissolution. Thus, the desire to increase accessions may have the unintended consequence of increasing rates of marital disruption in the military, and this is a consequence worth taking into account as changes in recruitment and eligibility are being considered.

Programs and policies that minimize or delay entry into marriage are likely to reduce rates of marital dissolution as well. To the extent that rising rates of marriage reflect higher numbers of vulnerable couples choosing to get married, then the decision to get married is a potential target for interventions designed to reduce marital dissolution and divorce. In theory, programs that promote more effective decisionmaking among unmarried couples should result in greater stability among the couples that do go on to get married.

The marriages of male and female service members may need different types of support. The challenges of maintaining a healthy marriage may be very different, and possibly greater, for female than for male service members. For civilian wives, maintaining their families and supporting their husbands in the military may be consistent with the social roles ascribed to women in society at large. In contrast, civilian husbands may have limited opportunities to support their military wives while maintaining their own roles in society at the same time. A first step toward reducing the disproportionately high levels of dissolution in the marriages of female service members is to examine the needs of these marriages directly and then to tailor programs specifically to address those needs.

Programs directed at military marriages require rigorous evaluation. If the limited resources available for supporting military marriages are to be allocated efficiently, the military needs reliable data on what programs are mostly likely to be effective. Before investing heavily in any one approach toward supporting military marriages, similar data on the effectiveness of the programs should be consulted, or, where not

available, generated. The alternative is to run the risk of allocating limited resources to programs that have little or no effect.

Programs that improve the conditions of service members may improve their marriages indirectly. Strategies that improve the lives of military families (e.g., spouse employment programs, support for obtaining affordable housing, child and health care services, less mobility) may also have indirect benefits for marriages by removing obstacles to effective relationship maintenance. The fact that many such programs already exist may account for the relative resilience of military marriages observed here. The broad implication of the themes discussed in this monograph is that such support programs should continue to be developed and refined.

Reserving programs and benefits for married couples may have the unintended effect of encouraging vulnerable couples to marry. It is hard to argue with efforts to improve the lives of military couples. Yet to the extent that valuable benefits are reserved for married couples only, the existence of those benefits may induce couples to marry who might otherwise have postponed marriage or never married at all. In this way, efforts to support marriages in the military could have the paradoxical effect of leading to higher rates of marital dissolution. The solution to this dilemma is not to reduce the support offered to military couples but rather to introduce some flexibility in who is eligible for family support. The more that a broad array of family structures (e.g., cohabitation, single parents) is recognized, the fewer couples will be compelled to marry inappropriately to obtain benefits.

Acknowledgments

The authors wish to thank Michelle Rudolph and Debbie Eitelberg of the Defense Manpower Data Center, not only for assembling the data set that forms the backbone of this monograph but also for painstakingly addressing our many questions as we conducted the analyses. We thank Betty Maxfield, head of the Army Demographics Unit in the Human Resources Directorate of the Office of the Deputy Chief of Staff for Personnel, for sharing her own analyses of marriage and divorce data with us. At RAND, we benefited tremendously from the support and insights of our colleagues John Adams, Meg Harrell, Jim Hosek, and Jacob Klerman. Finally, we thank Ann Lee and Janice Laurence, in the Office of the Secretary of Defense, Personnel and Readiness: Ann, for shepherding this project in its early stages, and Janice, for initiating it in the first place and patiently seeing it through to completion.

Abbreviations

AFPC/DPSA	Air Force Personnel Center/Plans, Analysis, and Information Delivery Division, Directorate of Assignments
AFQT	Armed Forces Qualification Test
BAQ	basic allowance for quarters
BAS	basic allowance for subsistence
CHAMPUS	Civilian Health and Medical Program of the Uniformed Services
DMDC	Defense Manpower Data Center
FY	fiscal year
NSFH	National Survey of Families and Households
OPM	Office of Personnel Management
P.I.C.K.	Premarital Interpersonal Choices and Knowledge [program]
POW	prisoner of war
PTSD	post-traumatic stress disorder
SAF	Survey of Army Families
SOEP	Survey of Officers and Enlisted Personnel
TDY	temporary duty

CHAPTER ONE

Introduction

On August 12, 1993, the Commandant of the Marine Corps, General Carl E. Mundy, Jr., released a directive that the Marines would begin to phase out married recruits among the enlisted ranks, with the goal of eliminating married recruits within two years. To justify this decision, the directive suggested that the marriages of young Marines were at risk because of the stress associated with military service, and that problems at home in turn exert a negative effect on performance. Given that the demands of military life were unlikely to change, favoring unmarried recruits could be viewed as a way of enhancing the performance of service members. Reaction to the directive was swift and almost uniformly negative. At the time, the military was still reeling from the controversial "Don't Ask—Don't Tell" policy regarding homosexuals in the military. As the *New York Times* put it, "The new edict would have produced the paradoxical situation in which the marines would have accepted gay recruits—as long as they were quiet about their status—but not married heterosexuals" (Krauss, 1993b). Within hours of its being reported in the press, Secretary of Defense Les Aspin had rescinded the order. General Mundy distanced himself from the order as well, blaming its release on the actions of an overzealous underling (Krauss, 1993a).

The severe reactions were evidence of the profound shift in attitudes toward marriage that had occurred within the military since the end of the draft in 1973 (Albano, 1994). Prior to that time, service members were expected to be unmarried, as expressed by the old adage: "If the Army had wanted you to have a wife, it would have

issued you one." Once the military had to compete with other employers, however, its leadership was forced to consider quality-of-life issues in order to attract and retain qualified personnel. The marriages and families of service members, as primary determinants of quality of life, factored powerfully into those considerations (Janofsky, 1989). Today, the majority of service members, both male and female, are married (Military Family Resource Center, 2003), and marriage rates among service members exceed rates for comparable civilians (Cadigan, 2000; McCone and O'Donnell, 2006).

The Implications of Marriage for the Military

Changes in the marriage rates of service members have been associated with a commitment on the part of the military to support the marriages and families of military personnel. This commitment is based on two assumptions about the effects of service members' marriages on the military. First, the military has assumed, as General Mundy did, that marital status affects *performance*, so that married service members who are worried about or otherwise distracted by thoughts of their families may perform less ably than unmarried or happily married service members. To date, support for this assumption has been mixed. For example, following the aborted attempt by the Marines to eliminate married recruits in 1993, the Department of Defense commissioned a report to evaluate the effect of marital status on combat readiness. That report concluded that marital status had no significant association with readiness (Office of the Assistant Secretary of Defense for Personnel and Readiness, 1993). In contrast, a 1992 RAND report (Burnam et al., 1992) suggested that, within the Army, married soldiers may be better off, in that they report slightly lower rates of job-related problems than unmarried soldiers. One potential moderator of the effects of marital status on military performance is the quality of the marital relationship (i.e., marital satisfaction), but to date research addressing the effects of such variables on military performance has been sparse (Schumm, Bell, and Resnick, 2001). Interviews with military families, however, suggest that service members believe that their

effectiveness as soldiers is positively associated with the quality of their home lives. That is, they believe that satisfying relationships with their spouses enhance their performance, whereas distressing relationships at home impede their performance (Rosen and Durand, 2000a, p. 68).

The second rationale for the military's current commitment to supporting military families is the assumption that marital status affects *retention,* so that those whose family obligations conflict with military service are less likely to reenlist than those with no competing family obligations. There has been far more research on this issue. One study focusing on the effects of marital status drew from service personnel records to show that active service members who are married are in fact slightly less likely than those who are not married to complete their initial term of service. However, of those who do complete their initial term, those with families are more likely to reenlist than those without (Cadigan, 2000). Studies assessing family members' satisfaction with military life paint a more consistent picture: Across numerous studies, service members whose families are happy with military life are significantly more likely to reenlist compared with members whose families are less satisfied with military life (e.g., Bourg and Segal, 1999; Bowen, 1989a; Johnson, 1996; Kelley et al., 2001; Kelley et al., 2002; Mohr, Holzbach, and Morrison, 1981; Rosen and Durand, 1995; Rosen and Durand, 2000a; Segal, 1986; Teplitzky, Thomas, and Nogami, 1988; Vernez and Zellman, 1987).

Thus, the weight of the existing evidence suggests that the marriages of service members, through their effects on performance and retention, may have significant implications for national security. Moreover, the best of this evidence suggests that it is not marital status per se but rather the quality of the marital relationship that carries the effects. Accordingly, every service of the armed forces had established family support programs and centers by the mid-1980s (O'Keefe, Eyre, and Smith, 1984), and expanding and refining these programs has been an ongoing concern within the military ever since. Most recently, on February 6, 2006, President Bush submitted to Congress a budget that requests an unprecedented $5.6 billion for programs and services addressing the needs of military families.

The Implications of the Military for Marriage

Supporting military families effectively and efficiently requires theories that identify sources of vulnerability in these families, i.e., models that specify who is likely to require support, what sort of support is required, and when that support should be provided to have maximum impact. Unfortunately, as a number of scholars and observers have noted (e.g., Bowen and Orthner, 1989), such theory is currently lacking. Although there is widespread consensus that juggling the conflicting demands of military and family life raises significant challenges for service members (Office of the Assistant Secretary of Defense for Personnel and Readiness, 1993), the source of those challenges and the extent to which they are associated with the outcomes of military marriages remain unclear. In the absence of an explicit model of military family outcomes, current family support programs appear to be guided by two general hypotheses about the needs and vulnerabilities of military families.

The Stress Hypothesis

Military life places severe demands upon military families:

> The specific demands of the U. S. military . . . include risk of injury or death, geographic mobility, periodic separation of the service member from the rest of the family, long working hours and shift work, residence in foreign countries, and normative pressures controlling behavior outside of working time. . . . While there are other occupations that share specific characteristics of the military lifestyle, the military is almost unique in its constellation of requirements. (Segal, 1989, p. 7)

The demands of military service may severely constrain the ability of spouses in military marriages to maintain closeness and intimacy. For example, time spent separated during deployments is time away from communication, effective problem-solving, and activities that promote intimacy. The experience of war can have a profound and lasting impact on a deployed spouse, just as the experience of independence can lead to changes in the spouses and children who remain

behind. Thus, even spouses in established relationships may be required to adjust to each other anew during deployment and reunion. Given the salience of these challenges, it is not surprising that many people believe that the stresses of military life lead to higher rates of marital dissolution for military families compared with civilian families, especially during wartime. Military spouses in particular report a strong belief that military stress affects divorce (Rosen and Durand, 2000a).

In recent years, the stress hypothesis has received increased attention from military leaders and public officials due to the fact that demands on the armed forces are higher than they have been at any point since the beginning of the all-volunteer force. Since the onset of the military operations in Afghanistan and Iraq, deployments throughout the military have been more widespread, longer, and more frequent than in recent years. Furthermore, a higher proportion of deployed service members have been exposed to combat, and casualty rates are higher than at any other time since Vietnam (Hosek, Kavanagh, and Miller, 2006). To the extent that coping with these demands leaves military families vulnerable, the stress hypothesis predicts rising rates of marital dissolution for military families in the years since the start of the military actions in Afghanistan and Iraq.

The Selection Hypothesis

Although the potential for military stress to cause marital dissolution may be especially salient in recent years, this effect is not the only reason that rates of marital dissolution may be higher among military families than in the comparable civilian population. A second explanation may be a selection effect: The armed forces may select recruits whose marriages would be at elevated risk for divorce regardless of the stress of military service. Two lines of evidence justify this hypothesis. First, comparisons between individuals who do or do not volunteer in the military indicate that those who enlist are significantly more likely to come from populations that are already at increased risk for experiencing marital dissolution. For example, a study examining predictors of enlistment among more than 100,000 high school seniors found that those who enlisted had lower grades, were more likely to be black or Hispanic, and were less likely to have plans to attend college and

to have parents who attended college (Bachman et al., 2000). Each of these variables has been associated with less-satisfying marriages and higher divorce rates as well (Bramlett and Mosher, 2002; Karney and Bradbury, 1995). Second, the military, in attempting to make the institution more supportive of families, may have inadvertently created incentives that encourage couples to marry (e.g., Pexton and Maze, 1995), including more-vulnerable couples who would not have married otherwise. A number of analyses indicate that marriage rates among service members are correlated with pay levels (e.g., Kostiuk, 1985) and that the benefits reserved for married personnel encourage marriages that might not have occurred in the absence of benefits (Zax and Flueck, 2003). Both these lines of evidence suggest that the military may attract people whose marriages are especially likely to end in divorce. To the extent that divorce rates have been increasing in recent years, the selection hypothesis suggests that a higher proportion of vulnerable couples may be getting married.

The stress hypothesis and the selection hypothesis are not mutually exclusive. On the contrary, both effects may co-occur or even interact, so that selection pressures in the military may attract individuals whose marriages are especially vulnerable to stress. Yet evaluating the evidence for each of these hypotheses remains a crucial task for those who are trying to support military families because each perspective highlights distinct approaches toward improving the lives and performance of service members. The stress hypothesis suggests that military families require resources and skills to assist them in managing the demands of military life. A number of currently available family support programs are aimed at providing military families with these resources. For example, the Army has begun to provide education in effective communication and problem-solving to couples who have been reunited after long deployments, presumably to help such couples face the challenges of the reunion period. The selection hypothesis, in contrast, suggests that service members need guidance, not in maintaining their marriages but in choosing when and whom to marry in the first place. Programs consistent with this perspective include the Premarital Interpersonal Choice and Knowledge program (also known as the P.I.C.K. a Partner program or "How to Avoid Marrying a Jerk"),

a course administered by chaplains in the U. S. Army that counsels unmarried soldiers to carefully consider and even delay marriages prior to deployments (e.g., Jelinek, 2006). Decisions about how to allocate limited resources to these or other programs require accurate data and specific theories describing whether and how much different sources of influence may account for the success or failure of military marriages.

Overview of the Monograph

The overarching goal of this monograph is to strengthen the empirical and theoretical foundation of military family policies by assembling and reviewing what is currently known about marriage and marital dissolution within the military. In pursuit of this goal, the remaining chapters are organized around four specific aims.

Chapters Two and Three review the existing theoretical and empirical literature on military marriages. Chapter Two focuses on theory, evaluating existing models that may explain and predict the outcomes of military marriages. Because there have been few well-specified theories developed explicitly for the military context, this chapter draws from theories developed with regard to civilian families and integrates that work with models that have been applied to the armed forces. The chapter ends by presenting an integrative framework for understanding the different sources of influence that may account for the success or failure of military marriages. That framework then serves as an organizing structure for Chapter Three, which reviews and offers a critical analysis of the existing empirical literature that accounts for variability in the experiences of military families. In keeping with the focus of this monograph, the review in Chapter Three is limited to the literature addressing couples and marriages, although literature not reviewed here has examined child outcomes as well.

Building on this theoretical and empirical foundation, the next three chapters offer new analyses to evaluate the effects of recent deployments on marriage and marital dissolution in the military. In Chapter Four, we reexamine data from the past ten years of military service personnel records to describe patterns and trends in marriage

and marital dissolution before and after the recent military operations in Afghanistan and Iraq. Although much has been written about rising divorce rates since the start of these operations, our analyses are the first to estimate precisely how rates of marriage and divorce may have been affected and how current rates compare to rates prior to the hostilities of recent years. Having established these trends, in Chapter Five we present supplemental analyses addressing specific hypotheses about why rates of divorce may have increased over the past several years. Chapter Six links the data on transitions into and out of marriage with data on deployment, to evaluate the direct effects of being deployed on a married service member's subsequent risk of ending the marriage. In each of these chapters, we present results separately for each service, for officers and enlisted members, for the active and reserve components, and for men and women.

Chapter Seven, the concluding chapter, provides a summary and general discussion of the results described in the prior three chapters and develops the implications of these analyses for efforts to support military families. Specifically, it identifies immediate priorities for research to fill specific gaps in our current understanding of how military marriages succeed and fail. The chapter ends with several recommendations for potential targets of programs and policies to support and strengthen military marriages.

CHAPTER TWO

Developing Models of Military Marriage

In the concluding chapter of their edited volume, *The Organization Family: Work and Family Linkages in the U.S. Military,* Bowen and Orthner (1989) characterized the military's family support programs as "largely reactive, developed primarily in response to specific problems and their symptoms" (p. 180). The underlying problem, they argued, was the lack of any articulated theory of how military marriages function. To guide effective family policies in the military, these authors described what an adequate theory would look like:

> There is a critical need for an explicit model of work-family linkages in the military (replete with underlying assumptions and operational outcome statements) that not only identifies the factors that promote level of adaptation to the multiplicity of organizational and family demands faced by servicemembers and their families, but also specifies the direct and indirect impact that military policies, practices, and programs have on the ability of servicemembers and their families to successfully respond to these demands. This model must reflect the dynamic and interactive quality of work and family life across the work and family life cycles. In addition, it must respect the tremendous age, ethnic, and cultural diversity found among families in the military services today by accounting for personal system-level influences, including the values, needs, and expectations of servicemembers and their families toward both work and family life. Finally, for

> purposes of clinical and community intervention, the model must be practice based—capable of guiding the development, implementation, and evaluation of policies, programs, and practices in support of families. (Bowen and Orthner, 1989, p. 180)

Nearly two decades later, it is not clear whether there has been much progress toward developing a model of the sort that Bowen and Orthner describe. For example, two recent edited volumes on military families—*The Military Family: A Practice Guide for Human Service Providers* (Martin, Rosen, and Sparacino, 2000) and *Military Life: The Psychology of Serving in Peace and Combat,* Volume 3: *The Military Family* (Adler and Castro, 2006)—neither offered nor referred to such a model, despite its obvious relevance for professionals and scholars who work with and study military families.

The goal of the current chapter is not to provide a comprehensive model of military marriage. Instead, our goal in this chapter and the next is to evaluate the current state of theories relevant to understanding how military marriages succeed and fail and, in so doing, to point a way to developing such a model. Toward that end, the current chapter reviews theoretical approaches to understanding marriage and examines how those approaches might be applied or modified to fit the military context. The chapter is organized into five sections. The first distinguishes between two marital outcomes—marital dissolution and marital satisfaction—and explains why these outcomes must be considered separately. The second and third sections review theories that account for marital dissolution and marital satisfaction, respectively, in civilian marriages. The fourth section draws upon these theories to identify elements that should be part of any model of military marriages. The final section assembles these elements into an integrative framework to account for the success and failure of military marriages. This framework then provides the structure for the review of empirical research presented in the next chapter.

Throughout this chapter and the next, the emphasis is primarily on understanding couples, leaving aside children and other family members affected by military marriages. As a number of studies have now confirmed, child outcomes are strongly determined by the qual-

ity of the bond between the parents (e.g., Amato, 2001; Amato and Booth, 2001; Booth and Amato, 2001; Ender, 2006). In keeping with concerns about the current challenges faced by military marriages, we focus on what is known about that bond specifically.

Marital Outcomes: Distinguishing Between Dissolution and Satisfaction

Research on marriage has addressed a wide range of marital outcomes, variously referred to as marital stability, marital adjustment, marital quality, marital satisfaction, marital dissolution, marital conflict, and many more (Karney and Bradbury, 1995). Yet underlying these myriad terms are just two distinct ways of understanding how marriages succeed or fail. For decades, one of these ways was described in terms of marital stability and defined explicitly as whether a marriage remains intact over some period of time or whether it ends in divorce or permanent separation. The problem with the term *marital stability*, however, is that the word "stable" generally connotes not only a marriage that endures over time but also one that is steady and unchanging (Karney, Bradbury, and Johnson, 1999). In the context of marital research, these connotations can affect interpretations of results in unintended and misleading ways because marriages described as stable may endure and yet not be steady in any way. A highly distressed and conflictual marriage that persists over time would be described as stable using this definition, even though few would aspire to this sort of lasting relationship. To avoid possible confusion, we avoid this term and instead use the term *marital dissolution* to refer to whether a marriage ends or remains intact.

The second broad class of marital outcomes involves spouses' own evaluations of the marriage and of each other. Marital outcomes assessed through spouses' self-reports generally fall into this category, and studies have consistently shown that whether the specific variable is called marital satisfaction, marital adjustment, or marital quality, self-reported assessments of marriage tend to be highly intercorrelated (e.g., Fincham and Bradbury, 1987; Heyman, Sayers, and Bellack,

1994; Weiss, 1980). We refer to these sorts of evaluations collectively and generally as *marital satisfaction,* defined as the extent to which a spouse perceives the marriage to be personally fulfilling and worth maintaining.

Although marital satisfaction and marital dissolution are significantly associated (i.e., satisfied spouses are less likely to dissolve their marriages than are dissatisfied spouses), they are not overlapping constructs. Lewis and Spanier (1979; 1982) were among the first to highlight the conceptual independence of these outcomes, observing that marriages can persist for years despite neither spouse's experiencing much satisfaction—just as relatively satisfying marriages can nevertheless end. Indeed, a meta-analysis of longitudinal research on marriage estimated that, whereas marital satisfaction is one of the strongest predictors of marital dissolution that has been studied, the effect size is still not that large (aggregate effect size r = .42 for wives and .29 for husbands; Karney and Bradbury, 1995). With respect to understanding military marriages, the implication of these results is that various aspects of military life may have independent effects on marital dissolution and marital satisfaction. Existing theories of marriage support the value of keeping these two classes of outcomes distinct, noting that dissolution and satisfaction may have different correlates and different predictors.

Marital Dissolution: Forming and Ending Marriages

The seminal theory describing how social relationships begin and end is *social exchange theory,* first developed by Homans (1958) and subsequently elaborated by Thibault and Kelley (1959) in their book *The Social Psychology of Groups*. Social exchange theory is essentially an economic analysis of social relationships. This approach assumes that individuals enter and leave relationships based on a rational weighing of the perceived rewards and costs of different decisions. Thus, relationships form when both partners perceive the *outcomes* they can expect to receive within a relationship (e.g., satisfaction, security) to be superior to the available *alternatives,* defined not only in terms of alternative

partners but also in terms of alternative situations, such as being alone. Similarly, relationships persist when the outcomes each partner receives within the relationship continue to be superior to those possible outside of the relationship. Thibault and Kelley (1959) suggested that the greater the difference between the outcomes of a current relationship and the outcomes available outside the relationship, the greater each partner's dependence on the relationship. In equation form:

DEPENDENCY = OUTCOMES – ALTERNATIVES

Applying these ideas to marriage has had considerable explanatory power. For example, social exchange theory explains why marital satisfaction does not have a stronger association with marital dissolution. To the extent that marital satisfaction is a global evaluation of the outcomes of a marriage, the dependency formula indeed suggests that, all else being equal, spouses who are more satisfied with the marriage should be more dependent, and therefore less likely to leave. However, the equation also suggests that, to the extent that they lack superior alternatives, spouses who are dissatisfied with their marriages may nevertheless be dependent on them. This perspective has been used to understand why battered women remain with and even return to the husbands who abuse them—they often perceive the alternatives as worse than the status quo (Rusbult and Martz, 1995; Strube, 1988). Conversely, even satisfied spouses may be tempted to leave their marriages if their available alternatives are sufficiently attractive. Demographic analyses consistent with this idea have shown that divorce rates are higher in communities containing larger numbers of eligible partners (South and Lloyd, 1995). Presumably, in such communities, spouses are less dependent on their current relationship to attain the same level of outcomes.

In the 1970s and early 1980s, thinking about alternatives broadened the concept to include not only other relationships but also all the potential consequences of leaving a current relationship. Levinger (1976), for example, elaborated on the *barriers* to leaving relationships, defined as all the forces that act to keep spouses in their marriage, independent of the qualities of their relationship. Lack of financial inde-

pendence, the threat of censure by peers and family members, and fears of losing one's children are all barriers to dissolving a marriage. Rusbult (1980) described the *investments* of time and resources that are tied to relationships, and suggested that the greater these investments, the more dependent partners are on maintaining the relationship. In analyses that later earned the Nobel Prize for economics in 1992, the economist Gary Becker and his colleagues (Becker, 1973; Becker, Landes, and Michael, 1977) adapted these ideas to predict divorce successfully from such variables as home ownership and income potential. Common to all these approaches is the idea that relationships and marriages can endure or dissolve for reasons that have little to do with whether or not the relationship is personally satisfying to the partners. Changes in perceptions of the alternatives to an existing relationship can change the risk of dissolution even when satisfaction with the relationship itself remains constant.

Marital Satisfaction: Maintaining Marriages

Significance of Marital Satisfaction

Considerable research on civilian marriages has identified important outcomes that are associated with marital satisfaction, independent of whether or not the marriage remains intact. For example, both partners experience better emotional and physical health, are more successful in their jobs, and seem to be protected from other sources of stress when they are satisfied with their marriages, compared with when they are not (e.g., Kiecolt-Glaser and Newton, 2001; Stack and Eshleman, 1998; Waltz et al., 1988). Marital distress, however, is associated with lower rates of productivity, higher risks of emotional and physical illness in partners, and poorer rates of recovery from illness (e.g., Forthofer et al., 1996; Kiecolt-Glaser et al., 2005). The effects of marital satisfaction extend to children as well. Even within intact families, children have fewer emotional and physical problems and better educational outcomes when the relationship between their parents is satisfying and relatively free of conflict (e.g., Booth and Amato, 2001; Repetti, Taylor, and Seeman, 2002). Overall, the quality of the marital relationship has

been shown to be a stronger correlate of life satisfaction among adults than any other variable that has been studied, including health, professional success, and financial status (Glenn and Weaver, 1981). Thus, the military has an interest not only in whether or not the marriages of service members dissolve, but also in how satisfied spouses are in those marriages that remain intact.

Perspectives on Marital Satisfaction

Given the importance of marital satisfaction, it is not surprising that research on what makes marriages satisfying has a long history. Throughout the course of that history, theories of marital satisfaction have reflected a number of different approaches. A complete review of these theories lies beyond the scope of this monograph, but a brief overview of the development of theories in this area may serve to highlight the constructs that have been deemed most relevant for understanding marriage.

The earliest scholarship on marriage, for example, emphasized *individual differences,* suggesting that some individuals were, by virtue of their enduring characteristics, prone toward having more successful marriages than others (e.g., Burgess and Cottrell, 1939; Terman, 1948). Later researchers identified pathways through which personality and other individual differences affect marital quality directly (Bolger and Schilling, 1991; Caspi, Bolger, and Eckenrode, 1987). For example, enduring characteristics, such as personality, constrain the potential partners and situations that an individual is likely to encounter. Because people tend to marry individuals whose personalities match their own (Caspi and Herbener, 1990), more-vulnerable individuals will tend to be paired with similarly vulnerable individuals, and more-resilient individuals will tend to be paired with more-resilient individuals. More broadly, to the extent that personality and other enduring characteristics shape other life outcomes, such as education and employment, those whose personalities are more difficult will tend to find themselves in circumstances that are less conducive to satisfying relationships—i.e., they will work long hours or have less financial security (see, for instance, Caspi, Elder, and Bem, 1987). Beyond shaping situations, spouses' enduring characteristics affect the way they react within

each situation. Analyses of neurotic individuals, for example, reveal not only that they experience higher numbers of negative encounters on a daily basis but that they are more distressed and that their distress lasts longer after a negative encounter, compared with less neurotic individuals (Bolger and Schilling, 1991; Bolger and Zuckerman, 1995). The influence of the individualist view of marriage extends to the present day in research that examines such enduring characteristics as psychopathology (e.g., Beach and O'Leary, 1993), personality (e.g., Kelly and Conley, 1987), and attachment style (e.g., Hazan and Shaver, 1994) for their associations with marital satisfaction.

In the 1970s, marital researchers began focusing attention less on individual differences and more on *dyadic processes,* i.e., how spouses relate to each other within the marriage. Confronted by distressed couples seeking therapy, marital researchers who were clinical psychologists began to examine closely the immediate source of most of their complaints, namely the quality of their communication and conflict resolution (e.g., Raush et al., 1974; Weiss, Hops, and Patterson, 1973). The premise of this work was that marital satisfaction was the direct result of the way spouses interacted with each other. The earliest empirical research in this vein drew upon observations of marital interactions to show that distressed couples did indeed exchange more negative behaviors and fewer positive ones than did satisfied couples (e.g., Gottman, 1979). Moreover, this line of work applied behaviorist principles to explain how negative patterns of behavior might come to be reinforced within a marriage. For example, coercion theory (Patterson and Hops, 1972) suggests that when one partner must nag and whine before the other partner agrees to a desired change in the relationship, that partner is reinforced for nagging and whining, and thus behaviors that neither partner likes or desires are likely to recur. Later work extended the concept of interaction to include not only explicit behaviors but also cognitive and emotional aspects of the way spouses understand and react to one another (e.g., Bradbury and Fincham, 1990; Gottman, 1994).

More recently, research on marital satisfaction has expanded its focus beyond the spouses and their interactions, acknowledging the *context* in which marriages take place and develop. This perspective

actually traces its origin to research that Reuben Hill, an army psychologist during World War II, conducted with military families that were struggling after having been separated during the war. In his classic book *Families Under Stress* (1949), Hill suggested that maintaining a cohesive family unit depended not only on the resources of the family but also on the number of demands and challenges that the family has to face. All else being equal, families that face greater stress will experience worse outcomes than families in more supportive circumstances. Although Hill's work drew attention to the ways that stresses and supports outside the marriage affect outcomes within the marriage, this idea received little development from marital researchers until the late 1980s, when researchers began to examine how spouses' perceptions of their marriage were affected by their experiences at work (Bolger et al., 1989).

Current models of families and stress have drawn on this research to elaborate on Hill's original work in several ways. First, modern research has distinguished between the effects of time-varying acute stressors and long-lasting chronic stressors, suggesting that the negative effects of acute demands on marital satisfaction are exacerbated in families that are also coping with ongoing chronic stress (Karney and Bradbury, 2005; Karney, Story, and Bradbury, 2005). Second, current theories distinguish between stress spillover, i.e., the tendency for demands in one domain of life to affect an individual's perceptions and reactions in a separate domain (e.g., Tesser and Beach, 1998), and stress crossover, i.e., when stress experienced by one partner in the relationship affects the perceptions and reactions of the other partner (e.g., Larson and Almeida, 1999). Third, current theories have identified specific pathways through which demands outside the home may affect the quality of relationships within the home. Longitudinal research on newlywed couples, for example, shows not only that couples under stress have more problems to deal with and less time for relationship maintenance but also that their ability to resolve conflicts in an adaptive manner tends to decline (Neff and Karney, 2004).

Integrative Models of Civilian Marriage

The most recent models of success and failure in civilian marriages draw together elements from each of these perspectives within a single model. One example of this sort of integration is the Context-Trait-Process (C-T-P) model of marriage (Karney and Bradbury, 1995). This model, derived from a meta-analysis of over 100 longitudinal studies of mostly civilian marriages, was explicitly designed to integrate prior theoretical perspectives on marriage. As such, it has several distinct features. Drawing from behavioral approaches (e.g., Gottman, 1979; Weiss, 1978), the model suggests that satisfaction with a marital relationship is the direct result of the way spouses adapt to, interact with, and understand each other. The model moves beyond behavioral approaches, however, in suggesting that adaptive processes within a marriage are themselves shaped and constrained by two broader sources of influence: the enduring characteristics of each partner and the external circumstances of the couple. Spouses who possess personal strengths and those who live in supportive, resource-rich environments should generally experience more positive outcomes. Couples who bring multiple vulnerabilities to the marriage and those lacking resources to confront hardships should on the whole do worse.

Bringing these elements together in this way has several immediate theoretical implications. First, by positioning adaptive processes as the only direct source of influence on marital satisfaction, the model proposes that broader sources exert their influence on marital satisfaction only insofar as they affect processes and behaviors within the marriage. That is, stress and vulnerability affect satisfaction because they constrain the ability of spouses to engage in positive forms of relationship maintenance. Personal strengths and supportive environments enhance satisfaction because they facilitate positive relationship behaviors. Describing adaptive processes as mediating the effects of other variables on marriage was a new contribution at the time.

Second, by articulating links between the enduring traits of each spouse and the circumstances that they live in, the model proposes that these two sources of influence interact to affect spouses' experience of the marriage. Spouses with many personal strengths may still struggle if they are confronted with hardships that tax their ability to interact

and resolve problems effectively. Spouses with multiple enduring vulnerabilities may yet maintain their marriages successfully given a sufficiently supportive environment. Among those who do research on civilian marriages, the original C-T-P model has been widely cited. It is the basis of subsequent theoretical formulations (e.g., Huston, 2000), and it currently forms the theoretical foundation for the national Supporting Healthy Marriage study, funded by the Administration on Children and Families.

Key Elements for Models of Success and Failure in Military Marriages

Reviewing existing theoretical work on civilian marriages suggests some of the broad classes of variables that a complete model of military marriage should include. This section draws on that work to identify specific constructs that a comprehensive model of military marriage must contain. For each construct, we examine how military marriages may be distinct in ways that have important implications for understanding how military marriages succeed or fail.

Enduring Traits

Enduring traits and characteristics refer to all the relatively stable elements that each spouse brings to bear on a marriage. These include demographic variables (e.g., racial or ethnic background, socioeconomic status, religion, level of education), psychological variables (e.g., personality, psychopathology), and personal history variables (e.g., childhood environment, prior experiences in relationships). Research on civilian marriages has shown that all these variables are associated with marital outcomes, such that spouses with enduring sources of strength and resilience (e.g., higher levels of education, positive childhood environment, absence of psychopathology) tend to experience more-favorable outcomes than spouses with many enduring sources of vulnerability (Karney and Bradbury, 1995).

With regard to spouses' enduring traits and characteristics, military marriages are distinct from civilian marriages to the extent that

military service selects for some traits and characteristics and not others. For example, eligibility criteria for serving in the military generally exclude individuals who fail to obtain a high school diploma, admit to using illegal substances, have a criminal record, have a history of psychosis, or fail to reach a minimum score on the Armed Forces Qualification Test (AFQT). Because these characteristics are also associated with increased risk of marital distress and disruption, they serve to exclude from military service those individuals likely to have the most vulnerable marriages.

Yet, although the most vulnerable in society may be ineligible to serve, military service tends to attract the most vulnerable from among those that meet minimum requirements. Longitudinal survey research that followed over 15,000 high school students through their graduation revealed that, compared with those who do not enlist, those who enlist receive worse grades in high school, are less likely to have plans to pursue college, are less likely to have parents who attended college (a key indicator of socioeconomic status), and are more likely to be black or Hispanic (Bachman et al., 2000; Segal and Segal, 2004). Current and recent military personnel also tend to be younger, poorer, and less likely to report a religious affiliation than comparable members of the civilian work force (Teachman, Call, and Segal, 1993).

Although unique attitudes have received less emphasis, they may also distinguish service members from comparable civilians. For example, Bachman et al. (2000) found that high school students who enlist rate military work roles as more appealing than those who do not. To the extent that military work roles map closely onto traditional gender roles, this suggests that the military will select for men with highly traditional views of gender roles and women with highly nontraditional views. These sex-role attitudes have been directly linked with marital satisfaction (Bowen, 1989b; Bowen and Orthner, 1983). To the extent that spouses in married couples tend to be similar to each other (Blackwell and Lichter, 2004), the stable vulnerabilities of service members may be matched by similar vulnerabilities in their partners. At the outset of military service, then, military couples may be less equipped to maintain satisfying relationships than are comparable civilians.

Despite all that is known about the characteristics of those who enlist compared with those who do not, there are nevertheless many important individual differences that are likely to characterize military personnel but that have not been measured systematically. Foremost among these are personality traits. Personality, and in particular neuroticism, has been shown to be a powerful predictor of marital outcomes. In one longitudinal study that followed engaged couples for over 40 years, neuroticism proved a stronger predictor of whether or not the marriage endured or dissolved than any other variable measured (Kelly and Conley, 1987). It seems likely that a distinct pattern of personality traits distinguishes those who choose military service from those who do not, and these traits may have important implications for marital outcomes within the military. Most research on the association between personality traits and the decision to enlist, however, dates from before the birth of the all-volunteer military (e.g., Miller and Morrison, 1971) and so is likely to be out of date. A second individual difference of well-established importance to marital outcomes is psychopathology, and in particular depression. Depression and depressive symptomatology are strongly associated with more-vulnerable marriages (Beach, 2001). Although the military excludes those who have experienced psychotic episodes, those who have experienced milder forms of psychopathology are not excluded, and other facets of psychological and emotional well-being currently are not assessed systematically within the military. To the extent that military service selects for individuals along these dimensions, these variables are important to address in accounting for the outcomes of military marriages.

Emergent Traits

Most models that link marital outcomes to spouses' traits and characteristics treat those traits and characteristics as fixed variables. Indeed, most of the individual differences that partners bring to their relationships are fixed (e.g., personal history, ethnicity, socioeconomic status, health, or personality) or at least relatively unlikely to change in the absence of dramatic life events. Military service, however, is an abundant source of dramatic life events. It is beyond the scope of this monograph to review the many permanent changes, both positive and neg-

ative, that military service can bring about in service members and their families. For our purposes, it is sufficient to note that, beyond selecting for certain stable traits and characteristics, military experience may also create new traits over time that profoundly affect marital satisfaction. Especially among young couples, the growth, maturity, and financial stability afforded by military service may leave spouses better equipped for marriage at the end of service than at the outset. On the other hand, to the extent that spouses do not grow in congruent ways, personal changes arising during deployments may also drive couples apart. More dramatically, service members returning from battle may bring home lasting emotional and mental problems (e.g., post-traumatic stress disorder [PTSD]; Hoge, Auchterlonie, and Milliken, 2006) or physical disabilities that alter the dynamics of the existing relationship even after the member leaves the service. Thus, in contrast to current theories of marriage that describe individual differences as relatively stable qualities of each spouse, theories of military marriage must account for preexisting traits as well as traits likely to emerge as a consequence of military service. Each of these may have important, and separate, implications for the success or failure of military marriages.

Relationship Resources

Just as the attributes of the individual partners should affect their ability to cope with the demands of military service, so should the attributes of their relationship. Relationship resources encompass all the attributes of a relationship that a couple may draw upon in times of stress. These resources include such qualities as the duration of the relationship, the level of commitment to the relationship (i.e., is the relationship a cohabitation, first marriage, or remarriage?), the presence of children or stepchildren, and the quality of the marriage. In general, people with greater resources (i.e., their relationships are more committed, longer lasting, more satisfying, and they have more biological children) should be better able to weather difficult times and still emerge with intact and high-functioning marriages.

Relative to those of comparable civilians, the relationships of service members are known to be distinct on several of these dimensions. For example, male service members tend to marry at younger ages and have children sooner than do comparable men in the civilian population (e.g., Martin and McClure, 2000; Morrison et al., 1989). A recent analysis found that these differences persist even after demographic differences between service members and same-age civilians are controlled for (Cadigan, 2000). These differences do not appear to stem from any tendency of the military to attract married individuals. On the contrary, the same recent analyses compared data from service personnel records with data from the Current Population Survey to show that, upon accession, male service members are in fact slightly less likely to be married than same-age civilians (Cadigan, 2000). Rather than attracting married people, this result suggests that the military provides incentives that encourage new recruits to marry (see also McCone and O'Donnell, 2006). Perhaps as a result, male service members in general are more likely to be married and more likely to have children than are members of the civilian population (Office of the Under Secretary of Defense for Personnel and Readiness, 2001). Female service members, in contrast, are less likely to be married and tend to marry later than their civilian counterparts (Adler-Baeder et al., 2005). The result of these trends is that, when most military couples face challenges of military service, they do so as younger people in younger marriages, relative to comparable civilian couples.

The Military Context

The domain in which military marriages probably differ most obviously and drastically from civilian marriages is the context, i.e., the circumstances outside the relationship that affect its functioning. As we have already noted, military families must deal with dangers, long hours, and extended, involuntary separations that civilian couples do not face (Segal, 1989). Even in peacetime, military families endure frequent relocations that separate them from sources of social support and employment outside the military. Existing research on stress in civilian marriages suggests that these sources of stress may exacerbate the negative effects of the stressors that all families face (Karney, Story,

and Bradbury, 2005). In other words, it may be harder to manage such challenges as child-rearing, housekeeping, and finances given the other demands of military service. However, the military community also offers families sources of support not available to civilian couples. For example, military families have access to housing and child-care subsidies, health care, and other benefits that may ameliorate some of the demands of military service. Although relocations separate military families from nonmilitary sources of social support, they may serve to bind families closer to sources of social support within the military.

In sum, military service confronts military families with hardships that are likely to make maintaining a satisfying marriage more difficult. At the same time, however, the military context offers sources of support that may compensate, in part or in full, for those hardships. The net effect of the supportive and demanding aspects of the military context remains an open question.

Nonmilitary Circumstances

While they are coping with challenges directly associated with military service, military families must also navigate the other challenges that families face, such as maintaining a household, paying bills, and obtaining adequate health care. To the extent that military families are disproportionately young (nearly half of enlisted men and over half of enlisted women are under 25; Segal and Segal, 2004), these challenges are likely to be especially salient and difficult aspects of military family life, independent of the concurrent demands of military service. On the other hand, military families are also likely to have nonmilitary sources of support (e.g., family, friends, investments) that ameliorate the stresses of military life. Both the supportive and the demanding aspects of couples' lives outside the military are likely to affect the way they adapt to stress within the military.

Adaptive Processes

Adaptive processes refer to all the ways that spouses interact, communicate, resolve problems, provide support, and understand each other, and have been a central focus of research on civilian marriages. Yet there are several reasons to expect that adaptive processes in mili-

tary marriages may differ from those observed in civilian marriages. For example, spouses in military marriages spend significant lengths of time separated because of deployment. With the rise of the Internet and cellular communication, even spouses separated by deployments can now remain in regular contact (e.g., Bell et al., 1999; Ender, 2005a; Ender and Segal, 1998; Schumm et al., 2004), but the nature of these communications and their effect on military families have yet to be examined directly. Norms for communication and conflict resolution may also differ within the military context. Service members who grow accustomed to those norms may have difficulty transitioning to modes of interaction more appropriate for family life. Evidence for such patterns would suggest that effective communication between spouses may be more challenging in military marriages than in civilian marriages.

Barriers and Alternatives

The military context is likely to shape spouses' perceptions of the investments, barriers, and alternatives that affect their decisions to remain in or leave their marriages. For example, as noted earlier, "the real value of compensation for married service people substantially exceeds that for otherwise identical single service people" (Zax and Flueck, 2003, p. 7). Among the benefits reserved for married service members are the ability to live off-base, meals subsidized by the Basic Allowance for Subsistence (BAS), a higher housing allowance through the Basic Allowance for Quarters (BAQ), and health care for the spouse (Office of the Assistant Secretary of Defense for Personnel and Readiness, 1993). As already noted, these benefits should represent incentives to entering military marriages, leading to some marriages that would not have been viewed as worth entering in the absence of these incentives (see Lundquist and Smith, 2005). Furthermore, to the extent that these benefits are lost when the marriage ends, they should act as investments, discouraging military spouses from leaving marriages they might otherwise consider ending.

The effects of military service on barriers to leaving marriage are less straightforward. On the one hand, the military has been characterized as a "greedy institution," in that participation in the military serves

to weaken ties to competing institutions (Segal, 1986). For example, the frequent relocations of military life (e.g., Segal and Segal, 2004) foster social connections among military families at the same time that they weaken ties to civilian and extended family networks. Limited connections to sources of social support and employment outside the military should serve as a barrier to leaving military marriages. On the other hand, some of the barriers that distinguish service members from non–service members may act to separate service members from their own families. Deployment is the most obvious example of this effect. When service members are deployed and their spouses are not, both are forced to develop habits, connections, and sources of support that are independent of each other. To the extent that each spouse develops resources that are independent of the marriage, these resources lower the costs of leaving the marriage.

Perhaps the most frequently discussed effect of the military on marital dissolution is the way that military service shapes each spouse's access to alternative partners. Although we are aware of no data on rates of marital infidelity among military personnel, media reports are rife with stories of military marriages that have been dissolved as a result of one or the other partner forming a new relationship while the service member was deployed. Indeed, because the military requires spouses to be separated more frequently than similar civilian spouses, military life provides access to alternative partners that is usually denied to civilian couples. For example, during deployments, service members are sequestered away from their partners, often while working closely with members of the opposite sex under conditions of extreme stress. The spouse who is not deployed is also confronted with alternative sources of companionship that would be less accessible, and perhaps less attractive, if the deployed spouse were present. The result may be that both partners, while separated, perceive more available alternatives than they would otherwise, and thus are less dependent on the persistence of the current marriage.

Thus, whereas some aspects of military life (e.g., benefits reserved for married couples) may serve to increase dependence on marriage, others may serve to decrease it (e.g., frequent relocations and deployments, the availability of alternative partners). A general implication

of this perspective is that, over time, rates of marriage and divorce within the military should be sensitive to institutional changes (for example, rates of compensation and available benefits) that affect these considerations.

An Integrative Framework to Account for the Success and Failure of Military Marriages

Thus far, reviewing existing theoretical work on civilian marriages has highlighted the broad classes of variables that a complete model of military marriage must include. A necessary next step toward the comprehensive theory that Bowen and Orthner (1989) described is to suggest how these elements might fit together to account for the success and failure of military marriages. A useful framework should suggest concrete hypotheses, the testing of which should in turn suggest refinements and elaborations of the framework.

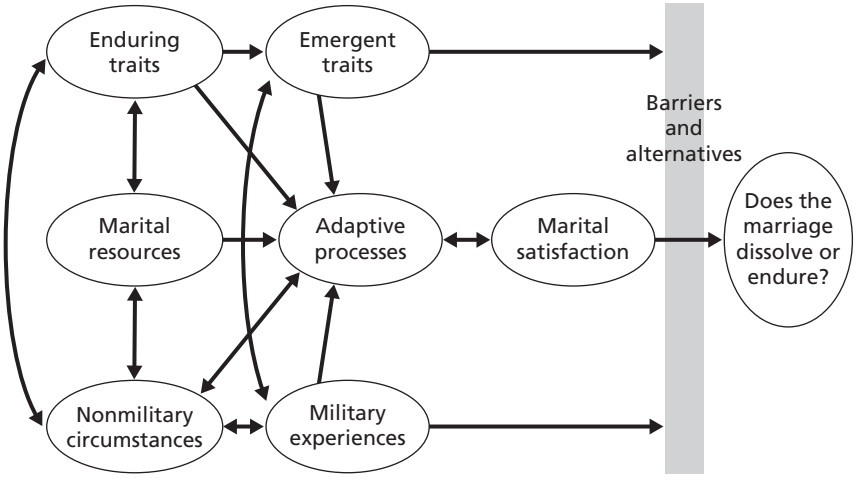
To arrive at a preliminary framework that may guide future research in this area, we drew upon the Context-Trait-Process model that was developed from research on civilian marriage (Karney and Bradbury, 1995). Adapting the prior model to apply specifically to military families required several changes. First, whereas the original model considered the characteristics of each spouse as stable variables, especially when compared with the other constructs in the model, a model of military marriage must acknowledge that military service can lead to dramatic and permanent changes in family members. Thus, a model of military marriage must account for both the enduring characteristics of each spouse and the traits that may emerge as a result of experiences in the military. Second, whereas the original model treated all sources of influence outside of the dyad as a single broad construct, a model of military marriage must acknowledge directly the unique effects of the military context. Thus, a model of military families must account for both the military and nonmilitary circumstances that couples face. Third, whereas the original model described marital satisfaction as the primary determinant of whether or not a marriage dissolves or remains intact, a model of military marriage must directly address

the structural barriers and incentives, independent of marital satisfaction, that may affect whether or not a marriage ends. Thus, a model of success and failure in military marriages must include alternatives to the marriage and barriers to leaving, and must link these features to other elements in the model.

The result of these changes is an integrative framework to account for the success and failure of military marriages. The framework is presented in Figure 2.1.

The integrative framework, like the original C-T-P model, describes adaptive processes between spouses as the sole mechanism through which other variables affect marital satisfaction. In other words, variables only affect spouses' perceptions of the relationship by affecting the way spouses interact, communicate, behave toward, and think about each other. Whatever facilitates adaptive processes helps the marriage; whatever constrains or detracts from adaptive processes hurts the marriage. Also retained is the idea that the traits spouses bring to the marriage interact with the circumstances they face to

Figure 2.1
An Integrative Framework to Account for Success and Failure in Military Marriages



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shape and constrain adaptive processes within the marriage. Yet the framework also moves beyond the prior model in ways that make it uniquely applicable to understanding military marriages. For example, by including military experiences as a separate construct, it acknowledges the broad influence that those experiences may have on military families. Existing theory suggests ways that service may affect processes between military spouses. For example, within marriage, existing guidelines for effective communication and problem-solving emphasize listening, mutuality, and compromise (Gottman, 1999; Markman, Stanley, and Blumberg, 1994). These are not values generally associated with communication within the military. For service personnel accustomed to interacting with other service members, adopting these habits may be more difficult than for civilian couples. Research on civilian marriage also demonstrates how the quality of the interactions between spouses may suffer when (1) they have more severe problems to resolve (Vogel and Karney, 2002) and (2) they are facing relatively high levels of concurrent stress (Bodenmann, 1995; Neff and Karney, 2004). Among military couples, who may on average be more likely than civilian couples to face relatively severe problems and long periods of stress, engaging in effective problem-solving and rewarding interactions may therefore be challenging. Finally, recent theories of civilian relationships highlight the importance of positive interactions in providing a foundation for intimacy and commitment (e.g., Gable et al., 2004; Reis and Gable, 2003). Military couples, separated by deployments and long hours, may have fewer opportunities for positive, intimacy-promoting interactions. Thus, even in the absence of direct data on dyadic processes within military marriages, current theories suggest several reasons to expect that military couples face more challenges in this regard than do comparable civilian couples.

Within civilian marriages, a well-developed body of research supports this prediction. Adaptive processes like problem-solving, social support, forgiveness, and showing affection are all strongly associated with marital satisfaction, and have been shown to predict changes in marital satisfaction over time (e.g., Gottman et al., 1998; Huston et al., 2001; Karney and Bradbury, 1997, 2000). Moreover, consistent with the predictions of the model, these processes have been identified

as mediators of the effects of other variables, such as parental divorce (Story et al., 2004) and stress (Neff and Karney, 2004).

The framework also includes direct links between military and nonmilitary experiences, acknowledging that these two sources of demands on couples may interact to affect the marriage. Specifically, the framework suggests that nonmilitary circumstances affect military marriages in two ways. First, circumstances external to the marriage may facilitate or constrain spouses' efforts to maintain their relationship. When that context is supportive (e.g., adequate resources, approval from friends and family), spouses will have more energy to devote to the relationship, and consequently marital satisfaction should be higher. When the context is stressful (e.g., financial strain, conflicts with family and friends), spouses will have less energy to devote to the relationship, and consequently marital satisfaction should be lower. A number of studies of civilian marriages find evidence consistent with these hypotheses, showing that marital satisfaction does tend to be lower in spouses facing higher levels of external stress (e.g., Tesser and Beach, 1998) and higher for couples surrounded by supportive family and friends (e.g., Surra and Hughes, 1997), and that these associations are mediated by the effort that spouses devote to relationship maintenance (e.g., Neff and Karney, 2004).

Second, the current framework suggests that nonmilitary demands on couples will interact with the demands of military service to account for marital outcomes. An environment that is rich in resources and low in demands should put couples in the best possible position to manage the strains of military service. In contrast, couples who are simultaneously trying to respond to other sources of stress may find the demands of military service especially taxing. Consistent with these ideas, one study that examined interactions between chronic and acute sources of stress in civilian marriages found that wives' satisfaction was more reactive to acute stressful events when they were also dealing with relatively high levels of chronic stress (Karney, Story, and Bradbury, 2005). In contrast, for couples in supportive environments, acute stress had either no effect on spouses' marital satisfaction or a positive effect, suggesting that couples with the resources to manage stress effectively may actually be brought closer together by stressful circumstances.

Finally, the framework includes direct links from military experiences and emergent traits to the barriers and alternatives that influence spouses' decision to maintain or dissolve their marriage, acknowledging that changes resulting from military service may alter the costs and benefits of marriage and divorce. The framework describes barriers and alternatives as moderating the association between perceptions of marital satisfaction and decisions about whether or not to dissolve the marriage. When barriers to leaving the marriage are high and attractive alternatives are few, marital satisfaction should be unrelated to marital dissolution. Spouses in such a situation are likely to remain in their marriages regardless of the quality of their relationship. In contrast, when barriers to leaving the marriage are low and attractive alternatives plentiful, then decisions about whether to maintain or dissolve the marriage should rest more heavily on perceptions of satisfaction with the relationship. These predictions follow directly from social exchange perspectives on marriage (e.g., Levinger, 1976), and have been supported consistently in research on civilian marriages (e.g., Kitson, Holmes, and Sussman, 1983; Levinger, 1979).

Although the framework described here represents a substantial advance over prior theoretical work on military marriages, it still falls short of the comprehensive theory sought by Bowen and Orthner (1989). For example, it does not specify the effects of different sorts of military demands. It does not directly address diversity in age or ethnicity, nor does it make specific predictions by rank, service, or occupation. Most seriously, the framework does not distinguish between the experiences of service members and the experiences of their civilian spouses. A comprehensive theory of military marriage should include all these elements. Instead, the current framework describes the constructs relevant to understanding military marriage at the broadest level. It describes the likely paths of association among these constructs but leaves out the direction of association among specific variables that might be used to assess these constructs. Filling in the details is the task of empirical research on military marriage. In the next chapter, we use our framework to organize a review of the products of this research to identify the links in the framework that have been established and those that have yet to be examined.

CHAPTER THREE

Review of Empirical Research on Military Marriages

Historians Modell and Haggerty (1991), in their review of research on the social impact of war, suggested that our understanding of the ramifications of military service had not advanced much since Homer described the homecoming of Odysseus. They attributed the lack of progress in this area to the way research has been conducted, writing:

> The social impact of war merits systematic treatment by social scientists but has not received it. Many substantial empirical contributions have added to our understanding of aspects of this subject, but these have rarely been well enough integrated in the literature to bring them to bear on one another. Rather, the currency of particular elements of war has lead to the sporadic production of ad hoc, rather than theoretically directed, work. (p. 219)

In forming their critique, Modell and Haggerty were not referring explicitly to research on military marriages, but their description applies to this area as much as it does to any other facet of military research. Although research on military families extends at least as far back as Hill's (1949) early research after World War II, to date this research has not accumulated enough to develop or refine a coherent understanding of how military service affects family life. There are several reasons why this has been true. First, to date there has been little research on military families to accumulate. In particular, although the military has been active in supporting military marriages for the past few decades, there has not been an equally active interest in supporting research on

military marriages. Second, the research that has addressed military marriages has been spread widely across decades, disciplines, and outlets. Research on the consequences of military service for families has been conducted by sociologists, economists, demographers, and psychologists, among others (e.g., Adler and Castro, 2006; Segal, 1989). Some of this research has involved selecting from representative samples those participants who have served in the military and comparing their experiences and outcomes with those of civilians. Other research has examined service members exclusively. Because this research has not yet been assembled in one place, it has been difficult for researchers to design new studies that build on prior work in this area. Finally, as Modell and Haggerty point out, most research on military families has indeed been "ad hoc," driven by an interest in particular problems or variables, rather than devoted toward elaborating a broader model. With a few exceptions that we describe in detail below, theories have not been tested in research on military families. Consequently, over the past several decades, research in this area has not accumulated to produce a richer understanding of how military marriages succeed or fail. The result has been a lack of progress on the empirical side, as researchers have been forced to reinvent the wheel over and over, and a corresponding lack of guidance on the policy side, as policymakers and military leaders have been forced to develop efforts to support military families without a broader understanding of the families' strengths and vulnerabilities.

The goal of this chapter is to provide a foundation for future research on military marriages by assembling and evaluating the empirical work that has already been done and organizing it within the integrative framework described in the last chapter. By identifying the hypotheses that have been supported, as well as those that remain to be studied, the current review should highlight priorities for future research and offer immediate directions for policies to support military families effectively.

The Scope of This Review

The term "military families" includes service members, their partners, their children, their parents, and all their other relatives who are affected by a member's military service. The scope of the current review is not that broad. Rather, the focus here is on romantic relationships involving service members and on military marriage in particular, consistent with current concerns about rising divorce rates since the beginning of military operations in Afghanistan and Iraq.

Researchers studying these relationships (e.g., Pittman, Kerpelman, and McFadyen, 2004) have distinguished between two outcomes. The first is *external adaptation*— the extent to which the family is able to function as a successful element of the military institution. For example, research on the links between family variables and retention decisions falls into this category. Because this topic has been studied with relative frequency and has received major reviews of its own (e.g., Office of the Assistant Secretary of Defense for Personnel and Readiness, 1993), we do not review research examining external adaptation. Instead, we focus our research on a second class of outcomes referred to as *internal adaptation,* i.e., the extent to which spouses and partners manage their relationships successfully within the context of military service. Research on marital dissolution and marital satisfaction among military marriages falls into this category. It is the primary focus of the integrative framework described in Chapter Two and of this review.

Within research on internal adaptation, some studies have drawn from broad samples of marriages and compared outcomes of those who have served with the outcomes of civilians across the partners' life span. Other research has drawn from samples comprising military marriages exclusively and have assessed outcomes only while partners and spouses were still affiliated with the military. We review both types of research but note the distinction between them, because life-span studies are likely to be more sensitive to the effects of military service than are studies restricted to current personnel. Throughout this review, we emphasize studies with larger samples and rigorous research designs, although smaller and less rigorous research is mentioned where appro-

priate when the findings are especially noteworthy. Because the context of military families has changed dramatically since the birth of the all-volunteer military in 1973, the review emphasizes research since that time. Thus, this review is selective, rather than comprehensive.

At the outset, it is worth noting that several constructs that have been shown to be important for understanding civilian marriages have never been addressed in research on military marriage. Where an important construct or pathway has been overlooked by research on military marriage, research on the relevant variables within civilian marriage is described, with a discussion of how well this research may generalize to the military context.

Limitations of the Existing Literature: On Methods for Studying Military Marriages

Before discussing the accumulated results of research on military marriages, it is necessary to highlight and acknowledge the methodological limitations of this literature. A small handful of methodological approaches dominate, and the limitations of those approaches will color any interpretations of the results of this work.

Reliance on Self-Report Data

Almost all the work reviewed in this section depends upon the responses of military personnel and their spouses to survey questions. For many variables (e.g., marital satisfaction), self-reports are an efficient and appropriate method of assessment because the perceptions of the individual are the variable of interest. For other variables, however, self-reports are known to be an imperfect representation of the variables of interest. For example, self-reports tend to underrepresent domestic violence, mental health problems, and income, and they may overrepresent others (e.g., combat exposure). Research on marriage, in particular, has long noted that spouses are imperfect reporters of events in their own relationships (Jacobson and Moore, 1981). Moreover, to the extent that independent variables and outcomes are both measured via self-reports (often on the same assessment instrument), common method vari-

ance may inflate observed associations between self-reported variables. Methods that move beyond self-reports (e.g., clinical interviews and third-party evaluations, observational data, physiological data) would complement self-reports, but to date these alternative approaches have not been used in research on military marriages.

Reliance on Cross-Sectional Data

The vast majority of research on military marriage is based on assessments conducted at a single point in time. Such data may be appropriate for research that seeks merely to describe associations among variables, but research on military marriages often seeks to address causal relationships or predictors of change in military marriages. For these questions, the limitations of cross-sectional data have been well documented (e.g., Karney and Bradbury, 1995).

Foremost of these limitations is the inability of cross-sectional data to distinguish preconditions from consequences, preventing this research from teasing out the effects of military service from the effects of enduring vulnerabilities in service members. To address change, researchers have often relied on retrospective reports, asking spouses to compare the current state of their marriage with a previous state. Retrospective reports, however, are known to be subject to memory and self-presentational biases that limit their ability to illuminate change over time, especially in marriage (e.g., Karney and Frye, 2002). Longitudinal data solve many of these problems, but longitudinal data on military marriages have rarely been collected.

Reliance on Data from Individuals

An irony of research on military couples is that it has relied almost exclusively on data from individuals. Even the DMDC surveys of recent years have gathered data from either service members or their spouses—but never both in the same study. The problem with an exclusive reliance on data from one partner is that spouses within the same marriage often perceive the marriage differently (e.g., Floyd and Markman, 1983). Moreover, the lack of data from both partners prevents examination of the interpersonal processes that are arguably the defining characteristic of a marriage. This is a particularly important

issue in military marriages, where the ways that spouses accommodate to each other's needs may be central to the process and outcome of the relationship (see, e.g., Janofsky, 1989). Gathering data from both spouses would be a preliminary step toward addressing these accommodations, but to date research on military marriage has rarely adopted this approach.

Unwarranted Assumption of Homogeneity

The samples addressed by research on military marriage vary widely across studies. Most studies rely exclusively on data from members of a single service, rank, or component; others combine data from across the military. Rarely is the choice of sample justified explicitly, and rarely is it acknowledged that results obtained in one segment of the military may not generalize to other segments. Yet there are reasons to expect that heterogeneity among different segments of the military may have important consequences for military marriages. With respect to the current military actions in Afghanistan and Iraq, the demands on service members have been measurably greater in the Army and Marines than in the Navy and Air Force. The characteristics of enlisted service members differ markedly from the characteristics of officers (Angrist and Johnson, 2000). Active members have access to a greater range of institutional support than do reservists (Knox and Price, 1999; Pryce, Ogilvy-Lee, and Pryce, 2000). Because stress, enduring characteristics, and the availability of support all feature prominently in current theories of marriage, researchers on military marriage would do well to keep differences among different segments of the military in mind. To date, however, research in this area has rarely acknowledged these sources of heterogeneity directly.

Infrequent Acknowledgment of Cohort Effects

As has been noted throughout this monograph, research on military families has a long history. It is tempting to draw upon this history and use the results of past research to comment on military families in the present. However, changes in the social context of military service make it likely that the results of research from prior eras will not generalize to contemporary military marriages. One significant turn-

ing point was the birth of the all-volunteer military in 1973. Prior to that time, young men could be compelled to serve, and service functioned as an intrusion into the life plans of some service members. The excellent work of Elder and his colleagues on the lives of World War II veterans examines the consequences of this intrusion and has identified those who benefited and those who suffered (Elder, 1986, 1987). Yet this work, and other research on military families prior to 1973, is unlikely to have much to say about contemporary military families, for whom military service is a choice. Even since 1973, service during different military actions may have different implications for families because the effects of military service may be moderated by public support for the specific military action (e.g., service in the 1991 Gulf War may have different implications than service in the current conflict in Iraq). Until models of military marriage are refined enough to take the changing social context of the military into account, assumptions based on prior research should be examined with caution. These issues have rarely been acknowledged in contemporary research on military marriage (see Ruger, Wilson, and Waddoups, 2002, for a rare exception).

Lack of Model Testing

As has already been noted in Chapter Two of this monograph, there has been very little development of theories in research on military marriage. Perhaps as a consequence, there has been very little testing of theories as well. Studies of military marriage tend to be descriptive, examining direct associations among variables. Hypothesis testing has been rare, research that examines competing hypotheses has been even rarer, and research that has addressed issues of moderation and mediation virtually nonexistent. The result, as will be seen in the review that follows, is that research has identified variables associated with the outcomes of military marriages but has done little to support or elaborate models that might explain how these variables fit together to explain how military marriages function.

Enduring Traits and Characteristics

To date, research on military marriages has not directly examined the associations between service members' characteristics and their marital outcomes. Nevertheless, some of the enduring characteristics that may characterize service personnel have been associated with higher rates of divorce and marital distress within civilian marriages (Karney and Bradbury, 1995). The integrative framework described in Chapter Two suggests several ways in which these associations might come about. First, as the model indicates, personal vulnerabilities of the spouses are likely to be associated with more difficult circumstances for the family, independent of the demands of military service. Younger and less-educated spouses, for example, are likely to have less wealth and thus more difficulty finding housing and health care. Such stresses are likely to inhibit spouses' ability to maintain satisfying relationships. Second, characteristics of the partners are likely to be associated with qualities of the marriage at the outset of military service, such as the length of the marriage and whether or not children were present prior to marriage. A history of childhood depression, for example, is associated with younger entry into marriage, which in turn is associated with higher rates of divorce (Gotlib, Lewinsohn, and Seeley, 1998). Third, more-vulnerable spouses are likely to experience more challenges interacting with each other positively during times of stress or separation. People who score relatively high in neuroticism, for example, tend to react more poorly to stress in their lives, and their reactions persist longer, compared with people who score relatively low (e.g., Bolger and Schilling, 1991). Fourth, more-vulnerable spouses are likely to experience worse outcomes within the military and may be more likely to experience permanent negative changes (e.g., disability, PTSD) as a result. Fifth, the vulnerabilities of the spouses are likely to be associated with the barriers and alternatives that factor into their decisions about whether to maintain the marriage or dissolve it. Although greater vulnerability should be associated with higher levels of distress, vulnerability may also be associated with fewer alternatives to the current relationship, paradoxically leading to marriages that may be both less satisfying and more likely to endure than other marriages.

Although most enduring characteristics of spouses may be expected to have similar effects within military and civilian marriages, one characteristic that appears to play a unique role in military marriage is gender. In civilian marriages, of course, rates of divorce are identical for men and women, and rates of marital satisfaction tend to be highly correlated within couples as well. In military marriages, however, marital outcomes may be very different for male and female service members. For example, the marriages of male and female service members may differ in the degree of vulnerability in the nonmilitary partner. Indeed, relative to the civilian wives of military men, the civilian husbands of military women are more likely to be unemployed (Segal and Segal, 2004) and may have other distinct patterns of vulnerability as well. The husbands of military women may also, as a direct result of their spouse's gender, experience stressful circumstances outside the marriage, such as discrimination and social isolation, that erode their satisfaction with the relationship.

It is worth noting that current trends in military recruiting suggest that the future will see more vulnerable individuals entering the military. As the demands and costs of the current military operations have become clear, the armed services, and the Army in particular, have had to loosen their requirements to meet annual recruitment goals (see, for example, *DoD Instruction 1145.01,* released on Sept. 20, 2005). Independent of the consequences of these policy changes for military performance, loosening the restrictions on entering service members is likely to result in higher rates of divorce among military marriages, as more individuals likely to have vulnerable marriages enter the military.

Emergent Traits

Research on the lasting personal consequences of military service has devoted most attention to negative outcomes, such as physical disabilities and PTSD. For example, with respect to the current military actions in Iraq and Afghanistan, recent analyses of all Army soldiers and Marines who returned from deployment during a one-year period (over

300,000 individuals) revealed high rates of mental health problems, especially among those who experienced combat (Hoge, Auchterlonie, and Milliken, 2006). To the extent that these problems persist, they are likely to negatively affect not only the service member but other family members as well, a prediction confirmed by several decades of research. For example, among veterans of the war in Vietnam, the experience of symptoms of PTSD has been significantly associated with elevated levels of hostile behavior, decreased capacity for intimacy, marital distress, and domestic violence (e.g., Jordan et al., 1992; Riggs et al., 1998; Roberts et al., 1982).

Research on veterans of more-recent military actions paints a similar picture. A recent study identified four escalating levels of PTSD symptomatology among Dutch peacekeepers who returned from military actions implemented by the United Nations (Dirkzwager et al., 2005; see also Fairbank and Fairbank, 2005; Fals-Stewart and Kelley, 2005; Figley, 2005). Interviews with the romantic partners and parents of these individuals revealed that partners reported more distress themselves and poorer evaluations of their marriages, the greater the service members' level of symptoms was. Interestingly, the parents of the service members were not affected by these symptoms, suggesting that spouses bear the brunt of the problems associated with a service member's PTSD. Research on the wives of Israeli Army veterans suffering from combat stress reactions paints a similar picture (Solomon et al., 1992).

There are at least two reasons why lasting mental and physical health problems among veterans should affect their spouses and their marriages uniquely—both of them consistent with the framework proposed here. First, in the case of PTSD, difficulties with communication and interpersonal processes are symptoms of the disorder. Indeed, these interpersonal difficulties have been shown to mediate associations between PTSD and marital outcomes among Vietnam veterans (MacDonald et al., 1999). Second, tending to a returned spouse with a chronic emotional problem or a physical disability represents an unexpected caregiving burden, one that the partner may not be prepared to bear (Beckham, Lytle, and Feldman, 1996; Dekel et al., 2005; Scaturo and Hayman, 1992). The results of dealing with the emergent problems

of a traumatized partner can be problematic in themselves, a phenomenon known as *secondary traumatization* (Figley, 1998).

Although the negative consequences of military service have received more attention, it should be noted that the personal changes attributable to military service may be positive as well, and indeed these positive changes may be more prevalent than the negative ones. For those who escape injury and trauma, military service can result in increased maturity, personal growth, new skills, and improved economic opportunities. As much as the negative outcomes of service harm marriages, these positive changes should enhance marriages by helping returned military personnel create circumstances that allow their families to flourish. Elder's extensive research on the life course of veterans of World War II confirms this idea, showing that, especially for those who were disadvantaged prior to serving, the experience of military service led to increased confidence, greater assertiveness, better training, and hence more favorable family outcomes after the war (Elder, 1987; Elder and Clipp, 1989; Elder, Pavalko, and Hastings, 1991). Studies of veterans of Vietnam find similar results (e.g., Goldberg and Warner, 1987).

Relationship Resources

As we noted earlier, compensation and benefits packages within the military may encourage early marriage and early childbearing. Thus, many military couples may be embarking on these transitions before they have established a history of commitment and trust, and this may be a source of vulnerability in their marriages (Janofsky, 1989). Consistent with this idea, longitudinal research on civilian populations finds that, independent of any stresses that couples face, older age at marriage and longer marital durations are significantly associated with lower risks of divorce (e.g., Booth and Edwards, 1985; Booth et al., 1985).

Because so much of what is known about military families comes from analyses of service personnel records, and because these records only distinguish among married, divorced, widowed, and single indi-

viduals, almost nothing is known about other varieties of relationships among service members and their partners (see Ender, 2005b). Cohabitation, a relationship status that has been studied extensively within civilian populations, is likely to be rare within the military because unmarried service members are not supported for living off-base and are unable to live with a romantic partner on-base. In contrast, remarriage, a form of relationship known to be at elevated risk for dissolution (Kurdek, 1991), is not uncommon within the military. Surveys that the Department of Defense conducted in 1992 with active service members revealed that over 29 percent of military marriages were remarriages for one or both partners, and included children from prior relationships (Adler-Baeder et al., 2005). Rates of remarriage were significantly higher for female than for male service members.

In one of the more rigorous studies to date of the implications of family form for the outcomes of military marriages, Adler-Baeder et al. (2005) drew from Department of Defense surveys conducted in 1992 and 1999 to compare the effects of relationship status (i.e., marriage versus remarriage) and parental status (i.e., children versus no children) on internal and external adaptation to the military. Analyses of data from both years revealed significant interactions. For first-married couples, parents experienced the military as less stressful than those without children. For remarried couples, parents experienced the military as more stressful than those without children. Overall, contrary to the authors' expectations, first-married childless couples experienced the most negative outcomes and appeared to be adapting to military life most poorly.

How to explain these findings? Other analyses by the same authors indicated first-married couples were significantly younger than remarried couples. It seems likely that the first-married couples without children consisted of the youngest people in the sample as well, and the ones married most recently. Thus, these couples had the most limited set of relationship resources to draw upon when facing the stresses of military life. On the other hand, among the first-married parents, children represent a biological investment in the marriage for both spouses. To the extent that these parents were more committed to the relationship, it makes sense that parents enjoyed superior outcomes compared

with the nonparents in this group. In contrast, remarried couples, being older, may also have been in older marriages. Either of these variables should be associated with greater relationship resources, and so should be associated with superior outcomes. Among the remarried parents, however, some children are likely to be children from prior relationships, and stepchildren are known to be a source of stress and conflict for remarried couples (e.g., Cherlin and Furstenberg, 1994; Daly and Wilson, 1996; Willetts and Maroules, 2004). Thus it makes sense that remarried parents report more negative outcomes than remarried couples without children. Because the authors did not control for age, and could not directly assess whether children were biologically related to both parents or not, these explanations remain speculative. Nevertheless, the overall pattern of results is consistent with the integrative framework presented here: Couples likely to have the most relationship resources appeared to adapt to military life most effectively.

Among civilian marriages, a relationship resource that has been consistently associated with effective adaptation to a variety of stressors is marital satisfaction. For example, compared with less-satisfied couples, those who evaluate their relationship more positively recover more quickly from injuries (Kiecolt-Glaser et al., 2005) and experience more rapid recovery from illnesses (e.g., congestive heart failure; Coyne et al., 2001). It seems likely that couples who are closer and more satisfied with their marriages at the outset of military service should similarly be better able to weather the stresses of military life. To date, satisfaction in military marriages has been measured sporadically and reported infrequently. As a consequence, very little is known about marital satisfaction in military marriages, either as a predictor of effective adaptation or as an outcome in its own right.

One study that has addressed the role of marital satisfaction in effective adaptation in military marriages drew from the 1992 Survey of Army Families (Pittman, Kerpelman, and McFadyen, 2004). This survey gathered data from wives of service members who had been deployed in the 1991 Gulf War and who had been returned for at least two months, examining how qualities of the marriage and available service during deployment were associated with postdeployment outcomes. Consistent with the framework offered here, wives who reported

higher-quality marriages during deployment also reported superior adaptation postdeployment. A smaller study of 48 families of returned prisoners of war found similar results (McCubbin et al., 1975). Controlling for background characteristics of the husband and the wife, couples who had been married longer and who reported higher levels of marital satisfaction prior to deployment also reported the smoothest adjustment after they were reunited.

Overall, research to date supports the idea that stronger relationships (i.e., more committed, longer lasting, higher quality) are associated with better outcomes for military families, both in terms of internal and external adaptation to military life. Yet the reliance on cross-sectional or retrospective surveys limits the power of this research to support causal conclusions. A stronger approach would be to assess the qualities of military marriages at the outset of service and then to follow couples through preparation, deployment, and reunion. With data from such research, we would be able to determine how the qualities of military marriages predict coping during deployment and outcomes after deployment.

Military Experiences

From the perspective of military leaders and policymakers, an important question about military marriages is how their success or failure is affected by the experience of military service. Unfortunately, this is not a simple question to answer, for several reasons. First, the meaning of military service has changed over time. During World War II, for example, conscription meant that military service was a fact of life for the majority of eligible men (Segal and Segal, 2004). There has been excellent research by Elder and his colleagues on how service during World War II affected the families of that generation of men (e.g., Elder, 1987; Elder, Pavalko, and Hastings, 1991), but this work is unlikely to apply to veterans of subsequent wars (e.g., Ruger, Wilson, and Waddoups, 2002) or to today's all-volunteer force. Second, military service is not a unitary experience but rather a complex set of experiences that develop over time. Because the timing, demands, and consequences of

military service vary widely across individual service members, identifying the specific aspects of military service that may account for the outcomes of military marriages can be challenging. Third, effects of military service on the marriages of service members are unlikely to be immediately evident. Because most who serve in the military are relatively young, the impact of military service on their lives and on their family's lives may not be known until after they have left the service. Evaluating the true effects of military service on the marriages of service members requires longitudinal data that follow service members across their life span—and such data are rare.

Research addressing the effects of military service on military marriages has addressed these challenges by adopting a wide range of methodologies. Some studies have examined variability in marital outcomes within samples constituted exclusively of service members, whereas others have compared the marriages of service members with the marriages of those who have not served. Some studies have been cross-sectional or retrospective, assessing service members and their families at a single point in time; others have drawn from well-known data sets to examine the course of service members' lives. Consistent with this methodological diversity, this body of research has not been guided by a common framework or theoretical perspective. Chapter One of this monograph described two general classes of explanations to account for the effects of military service on military marriages: the stress hypothesis and the selection hypothesis. To date, there has been enough research in this area that several distinct variants of each hypothesis have emerged and been examined in multiple studies. This section of this review will describe these hypotheses, evaluate the empirical support for each, and integrate them into the broad framework presented in Chapter Two.

The Selection Hypothesis: Does the Military Promote Premature Marriage?

Earlier in this chapter, we reviewed ways that the military selects for individuals prone to have vulnerable marriages. A second version of the selection hypothesis says that military service may select for vulnerable marriages by motivating couples to marry in haste (e.g., prior to an

impending deployment) or to take advantage of benefits reserved for married service members, leading to vulnerable marriages that would not otherwise have been formed. This perspective suggests that the military exerts direct influence on the formation of marriages more than on the maintenance and dissolution processes addressed by the framework presented in Chapter Two.

The challenge in establishing this sort of selection effect lies in identifying the characteristics that distinguish premature marriages from appropriately timed marriages. Most research relevant to this topic has avoided answering this question by inferring the presence of selection effects indirectly. For example, Pavalko and Elder (1990), in analyses of longitudinal data from Terman's cohort of men with high IQs (Terman, 1938), used the timing of the marriage to infer selection effects. In their study, men who married during the period of World War II, presumably the group most likely to contain those motivated to marry prematurely, were found to be at *lower* risk for subsequent divorce than were those who married before or after the war. This is a counterintuitive result, and it has been questioned on the grounds that Terman's sample of white, educated, middle-class men was not representative of those who served during that period. In fact, a separate analysis of these issues drawing upon retrospective data from the more representative National Survey of Families and Households (NSFH) found that marriages occurring during World War II were at *higher* risk of subsequent divorce that those formed before or after the war (Ruger, Wilson, and Waddoups, 2002). These results are more consistent with a selection hypothesis, but—as the authors acknowledged—they could have stemmed from any number of other aspects of the war years. Moreover, these analyses failed to observe similar effects during other periods and other wars, suggesting that pressures operating during World War II may have been unique to that period.

Yet, despite the inconsistencies of data from older cohorts, analyses of more-contemporary cohorts consistently suggest that military service promotes or hastens marriages that may not otherwise have occurred. We have already noted that service members marry at earlier ages and at higher rates than comparable civilians (Cadigan, 2000). Additional studies by Lundquist and her colleagues demonstrate that military

service is specifically associated with relatively high rates of marriage within populations whose rates of marriage are otherwise relatively low. For example, within the general population of the United States, rates of marriage are substantially higher for whites than for blacks (Bramlett and Mosher, 2002). Within the military, this difference disappears, suggesting that for blacks the military provides incentives for marriage that do not exist among comparable civilians (Lundquist, 2004). Similarly, among civilians, female employment is associated with delayed marriage and lower rates of fertility (Angrist and Evans, 1998). Female service members, however, marry comparatively early and have fertility rates that are relatively high, again suggesting that military service provides benefits that promote family formation activities among women that might not otherwise have occurred (Lundquist and Smith, 2005).

Thus, existing data do suggest that the incentives that the military provides to married service members may motivate marriages that would not have occurred in the absence of these incentives. However, this fact by itself does not address whether such selection effects account for observed differences in marital outcomes between military and civilian marriages.

The Sequence and Timing Hypothesis: Does Military Service Disrupt the Life Course?

The framework described in this monograph acknowledges that military service can permanently alter the circumstances of service members' lives (Gade, 1991). For the cohort of men that served during World War II, longitudinal studies by Elder and colleagues (e.g., Elder, 1987) made these links explicit, showing that the timing of military service within the life course of each individual affected the employment and educational opportunities that the individual faced after service. Whereas men who were younger at the start of the war were able to resume their career paths after the war ended, those who were more established prior to the war found that their careers and families had been disrupted, leaving them at a disadvantage relative to those who did not serve. The sequence and timing hypothesis suggests that such disruptions account for the effects of military service on marital out-

comes (Pavalko and Elder, 1990). That is, the hypothesis suggests that associations between military service and marital outcomes are indirect effects of the broader impact of military service on the course of service members' lives.

Aside from the results obtained by Pavalko and Elder (1990), there has been little support for the sequence and timing hypothesis. In an explicit attempt to replicate Pavalko and Elder's work, Call and Teachman (1996) examined how the timing of marriage relative to service was related to risk of divorce after the war in Vietnam. Once they had controlled for the main effects of age at marriage (i.e., the fact that those who marry at younger ages are at greater risk for divorce), they found no increased risk for divorce among veterans who married prior to or during their service during Vietnam, contrary to what the hypothesis would have predicted. Call and Teachman attempted to reconcile their findings with the earlier findings by noting that the average age of those who served in Vietnam was substantially lower than it was for those who served in World War II. They argued that relatively early military service should be less disruptive than later military service because younger service members have less-established adult lives to disrupt. Yet even this explanation is weakened by the fact that, as has been noted, other researchers have also failed to replicate the patterns observed by the earlier researchers, even within a cohort of World War II veterans (e.g., Ruger, Wilson, and Waddoups, 2002).

Despite the attention it has received in the past, the sequence and timing hypothesis does not seem relevant for understanding today's active military. Although it made sense to think of conscription as a potential disruption to the life course, it makes little sense to do so in the context of an all-volunteer force, where military service is a career choice rather than an imposition.

The Stress Hypothesis: Do the Demands of Military Service Damage Marriages?

Service members and their spouses agree that the strains of military service, and especially the demands of being separated by deployment, take a negative toll on their marriages. Indeed, as has been noted throughout this monograph, many unique and severe stressors are asso-

ciated with military service (Jensen, Lewis, and Xenakis, 1986; Rosen and Durand, 2000a). The framework presented here suggests that, all else being equal, those strains should hinder spouses' efforts to maintain their relationships (e.g., by minimizing opportunities for intimacy, by preventing effective problem-solving, by creating new problems to solve), and thereby lead to negative outcomes in marriages that might otherwise have avoided problems. Thus, the model echoes conventional wisdom in predicting higher rates of marital distress and dissolution in military marriages than in comparable civilian couples.

Yet, although the stress hypothesis is long-standing and intuitive, clear evidence in support of it has been hard to come by. For example, two independent analyses of data on Vietnam veterans have found that, controlling for age at marriage and other demographic variables, divorce rates for those who served during that war either did not differ or were lower than the rates for those who did not serve (Call and Teachman, 1991; Zax and Flueck, 2003). Analyses of retrospective data from the NSFH indicate that differences in divorce rates between veterans and nonveterans emerged in the years after the Korean and Vietnam wars rather than during the wars, when military service was presumably more stressful (Ruger, Wilson, and Waddoups, 2002).

No one disputes that military service is stressful for families, so why are those stresses not associated with clearer evidence of negative marital outcomes? Proponents of the stress hypothesis suggest that it is not military service per se that is especially taxing to military marriages, but rather specific elements of military service, in particular the stresses of deployment. A number of qualitative and survey studies have described these stresses in detail, noting that each stage of the deployment cycle (notification and preparation, separation, and reunion) is associated with unique and severe demands on military couples (e.g., Amen et al., 1988; Figley, 1993; Rosen et al., 1995; Rosen, Durand, and Martin, 2000). Yet despite the thoroughness with which the demands of deployment have been described, evidence that these demands account for negative outcomes in military marriages remains sparse. Evaluating the literature, Bell and Schumm (2000) commented:

> Although the public associates deployments with high divorce rates, there is no direct evidence that deployments cause divorce. Divorce rates fall during deployments because those desiring a divorce cannot act on their wishes until the service members return. Divorce rates rise after a deployment because service members get the divorces they wished to get earlier. . . . Accordingly, any relationship between deployments and subsequent divorce may be an artifact of self-selection or predeployment conditions. (p. 146)

In the same year, Angrist and Johnson (2000) drew upon data from the 1992 Survey of Officers and Enlisted Personnel (SOEP) to evaluate the effect of deployment on the marriages of those who served in the 1991 Persian Gulf War. For male service members, the analyses revealed no significant effect of deployment on divorce after controlling for background variables. For women, however, a significant effect did emerge even after controlling for background variables: female service members who had been deployed were significantly more likely to divorce than those who had not been deployed.

One reason that the effects of deployment on military marriages have not been clearer may be that research has focused primarily on marital dissolution, an outcome that, according to the framework described here, is only indirectly linked to the stresses that couples experience. The quality of the marriage, in contrast, should be directly affected by stress, whether or not the marriage dissolves. Few studies have examined this possibility, and those that have rely mostly on self-report and retrospective data, limiting their power to support strong conclusions. For example, one survey of soldiers deployed during Operation Desert Storm asked those whose marriages remained intact to report whether their deployment had affected their marital satisfaction (Schumm et al., 1996). On average, these soldiers reported no significant drop in satisfaction, but the lack of a comparison group of nondeployed soldiers, and the reliance on retrospective reports of change, suggest caution in interpreting this finding. Similar problems weaken a survey of spouses of soldiers deployed during that war (Rosen et al., 1995). On average, wives in that study reported that they coped effectively during their husbands' deployment and remained close to

their partners, but it is not clear how this group compares with wives of soldiers who were not deployed. One of the strongest studies of this question surveyed a large random sample of married active members of the Army, including both deployed and nondeployed, to examine the association between deployment and self-reports of intimate partner violence (McCarroll et al., 2000). Controlling for background variables, service members who had been deployed reported higher levels of moderate and severe physical aggression than service members who had not been deployed. Moreover, the amount of aggression was positively associated with the length of the deployment, such that those who had been deployed longer also reported higher levels of aggression. This study is the strongest evidence yet that the stress of separation due to deployment may lead to problems in the relationships of military couples, although a later (and smaller, less rigorous) study by these authors failed to replicate the effect (McCarroll et al., 2003).

Some have suggested that deployments affect military marriages most negatively upon the service member's return, not while the spouses are separated. Analyses of military families have long noted that the consequences of deployment for marriage may be felt most keenly when spouses are reunited and must adjust to the changes that each has gone through in the other's absence (e.g., Benedek, 1946). McCubbin and his colleagues have observed that coping strategies that are adaptive during deployment (e.g., developing alternative sources of social support) can interfere with couples' functioning after deployment (e.g., McCubbin, 1980; McCubbin and Dahl, 1976). In recent years, research on these issues has been driven by an interest in attachment theory (e.g., Cafferty et al., 1994; Vormbrock, 1993). These studies have examined military spouses' emotional responses to separation and reunion, but they have not generally evaluated marital outcomes. Other qualitative research has described the experiences of reunited couples but has not been able to tease out the effects of deployment and reunion from the effects of conditions in place before deployment (Rosen and Durand, 2000b).

In sum, although the stress hypothesis remains a potentially useful explanation for the effects of military service on marriage, support for it is weak and inconsistent across studies. One source of the inconsis-

tencies is likely to be the methodological limitations of the research. That is, the hypothesis has yet to receive a definitive test. Yet, given how demanding military service can be, it is perhaps surprising that the effects of military stress on military marriages have not been stronger or more consistent in the research that has been done. One reason that military marriages endure the stresses and demands of military service as well as they do may be that couples expect to endure them at the outset. To the extent that the demands of military service are viewed as normative, military couples may manage them in the same way that new parents manage the life-altering demands of the transition to parenthood (Menaghan, 1982). In new parents, the relationships of those who expect the new child to be stressful do better than the relationships of those who fail to anticipate that their lives will change significantly (Belsky, Ward, and Rovine, 1986).

Among military marriages, some evidence is consistent with the idea that couples who expect stress may be more resilient. In a study of 407 male Army members and their wives, Pittman (1994) found that the number of hours that husbands spent at work had no direct associations with either spouse's ratings of marital satisfaction. Instead, time spent at work affected marital satisfaction indirectly through its direct association with spouses' evaluation of the balance between work and family demands. Spouses who expected that the military would make high demands on the husband and were content with those demands maintained their satisfaction with the marriage regardless of the hours that the service member spent away from home. Such results raise the broader possibility that military spouses are generally able to keep the demands of military service in perspective—accepting the stress as an unavoidable aspect of their lives and making allowances for it that maintain the marriage.

The Trauma Hypothesis: Does Military Service Create Less-Fit Spouses?

The trauma hypothesis resembles the stress hypothesis in that both predict that negative aspects of military service harm military marriages. Yet the trauma hypothesis can be distinguished from the stress hypothesis in two ways. First, whereas the stress hypothesis addresses

the net effect of all the demands of military service, the trauma hypothesis focuses narrowly on the effects of exposure to combat. Second, whereas the stress hypothesis emphasizes the effects of military service on couples, the trauma hypothesis emphasizes the effects of military service on individuals. The general idea is that exposure to combat can affect lasting, and often negative, changes in service members (e.g., placing them at elevated risk for depression, PTSD, substance abuse, and antisocial behavior). These changes in turn leave military couples vulnerable to marital distress once traumatized spouses return from their deployments. The integrative framework presented here accounts for both hypotheses by suggesting that military experiences may affect marital outcomes through their direct effects on adaptive processes in the marriage (the stress hypothesis) or through their direct effects on emergent traits of the spouses (the trauma hypothesis).

This chapter has already reviewed the considerable research literature demonstrating that such disorders as depression and PTSD predict distress in military marriages. Additional research has examined the direct association between combat exposure and marital outcomes, often inferring trauma as a mediating variable. For example, studies of Vietnam veterans have found that those who had greater exposure to combat during their service also experienced higher rates of marital problems after their service (Kulka et al., 1990; Laufer and Gallops, 1985; Stellman, Stellman, and Sommer, 1988). Although the best data on this issue comes from research on Vietnam veterans, the effects of combat experience appear to generalize across wars. Using retrospective life-history data from the NSFH, Ruger, Wilson, and Waddoups (2002) estimated that, controlling for background and period of service, the experience of military combat in any war between 1930 and 1984 increased the risk of subsequent marital dissolution by 62 percent.

In perhaps the most refined analyses of these issues to date, Gimbel and Booth (1994) evaluated three explanations for how the association between combat exposure and adverse marital outcomes comes about. Their first explanation was a selection effect: Service members who are selected for combat may also be those whose marriages would have been vulnerable whether or not they had been exposed to combat.

Their second explanation was the trauma hypothesis: Exposure to combat may lead to psychological and emotional problems that create marital difficulties after deployment. Their third explanation was an interaction effect: Exposure to combat may exacerbate preexisting vulnerabilities in service members, which subsequently lead to marital problems. To compare the evidence for each of these possible explanations, the researchers drew from a sample of 2,101 veterans who had served as enlisted members of the Army during Vietnam. Exposure to combat was measured via self-reports on a 12-item scale, providing a continuous measure of combat exposure that represented a noteworthy improvement over the dichotomous assessments that had been used in other studies.

Preliminary analyses of these data confirmed that veterans who had experienced greater exposure to combat also reported greater marital difficulties (e.g., higher risk of divorce, higher rates of infidelity, higher rates of aggressive behavior toward their spouses). Moreover, this association remained significant even after controlling for preexisting vulnerabilities of the veterans, thus ruling out the selection explanation. In contrast, the analyses revealed strong support for the trauma and interaction hypotheses. That is, exposure to combat was found to be associated with stress symptoms and antisocial behavior in the veterans, and these variables fully accounted for the effects of combat exposure on marital outcomes (the trauma hypothesis). Moreover, these pathways were strongest for individuals with preexisting vulnerabilities (the interaction hypothesis). Although these analyses were entirely based on retrospective self-reports obtained at a single assessment, they remain the strongest analyses to date of the effects of combat experience on the outcomes of military marriages.

A related literature has examined the postservice outcomes of former prisoners of war (POWs). To the extent that being a POW is as traumatizing as exposure to combat, the marriages of former POWs should be at elevated risk for distress and disruption as well. Indeed, several studies of Vietnam veterans have confirmed this prediction. For example, a comparison of former Navy POWs and matched Navy controls observed significantly higher rates of divorce among the former POWs (Nice, McDonald, and McMillian, 1981). A more recent study

of Navy aviators who had been POWs and a comparison group of aviators who had not been captured also found higher rates of divorce among the POWs (Cohan, Cole, and Davila, 2005). Consistent with the framework described in this monograph, risk of divorce among the POWs was moderated by characteristics of the marriage prior to capture, a finding consistent with other research on variables that predict the successful reintegration of returned POWs (McCubbin et al., 1975). In other words, the stronger the marriage prior to this traumatic experience, the more resilient the marriage afterward.

Overall, the trauma hypothesis has received the most consistent support of any explanation for the effects of military service on military marriages. The weight of the evidence is consistent with the framework described here: Although military stress in general may not be associated with poor marital outcomes, traumatic experiences during service lead to lasting emotional problems in service members, which in turn account for the marital difficulties that these veterans experience. Yet, despite the consistency in this body of research, the trauma hypothesis is clearly not the full story of how military experiences affect marriages. It is worth noting that female service members are less likely to be exposed to combat than are male service members, and yet their risk of divorce is substantially higher. Explaining these gender differences is likely to require more than the trauma hypothesis.

The Benefits of Military Service for Marriage

Reflecting the emphasis of the vast majority of research on these issues, the research reviewed thus far has emphasized the negative effects of military service on marriage. Yet, the contemporary military experience contains elements that are likely to benefit marriages as well, even though they have been all but overlooked by research. It has been widely noted, for example, that in the decades since the institution of the all-volunteer force, the military has developed policies that are increasingly friendly to marriages and families (e.g., Janofsky, 1989; Lundquist and Smith, 2005). The effectiveness of these policies remains an open question, but their existence raises the possibility that families receiving support from the military may be at an advantage, relative to comparable civilian families. Moreover, military families, especially those

living on or near bases, form a supportive community for each other, and the ability to rely on that community has been shown to facilitate positive outcomes as well (Bowen et al., 2003; Pittman, Kerpelman, and McFadyen, 2004). Finally, for those who escape the traumatic effects of exposure to combat, military service may be an opportunity for personal, career, and financial growth, each of which should predict favorable marital outcomes after service (Hosek, Kavanagh, and Miller, 2006; Klerman, Loughran, and Martin, 2006; Loughran, Klerman, and Martin, 2006). Evaluating the benefits of deployment and military service and determining the variables that moderate whether the net effects of military service are positive or negative remain important directions for future research in this area.

Nonmilitary Circumstances

With respect to aspects of military families' life outside the military, research has focused more on stresses than on sources of support. A number of studies (e.g., Wolpert et al., 2000) have simply described the nonmilitary challenges that military families, and especially younger families, face. These reports, drawing from surveys of active Navy (Caliber Associates, 1996), active Air Force (Caliber Associates, 1998), and the spouses (mostly wives) of active Army members (Rosen and Durand, 2000a) generally present similar lists of the major nonmilitary stresses in the lives of military families: finances and spouse employment, housing, access to services (e.g., child care and health care), and separation from friends and family. We discuss each of these below.

Financial Stress and Spouse Employment

Nearly two-thirds of military personnel fall into the lowest pay grades (Adler-Baeder et al., 2005). Perhaps as a consequence, service members frequently report difficulties paying bills and meeting their financial obligations (Wolpert et al., 2000). In the 1995 wave of the Survey of Army Families (SAF), as many as one-fifth of respondents indicated that they depended on some form of public assistance in addition to the pay of the enlisted family member (Rosen and Durand, 2000a).

These financial limitations undoubtedly put pressure on nonmilitary spouses to seek employment. Indeed, in the 1995 SAF, 64 percent of employed nonmilitary spouses indicated that they worked to meet basic needs that the pay of the service member was insufficient to fill. Yet, despite this pressure, the frequent relocations required by military service make it difficult for many nonmilitary spouses to sustain a career or find steady employment (Harrell et al., 2004). Overall, these results suggest that military families may face greater financial strains than comparable civilian families. There have been no studies examining direct links between financial strain and marital outcomes in military marriages, but in civilian marriages, financial strain is a reliable longitudinal predictor of marital distress and dissolution (Conger et al., 1990; Conger et al., 2002), and this effect is mediated by the negative effect of economic strain on marital communication (Conger, Rueter, and Elder, 1999).

Housing

Seventy percent of married active duty service members live off-base in civilian housing; the percentage among junior enlisted members is even higher (Twiss and Martin, 1998). Although married service members receive a housing allowance, this amount is rarely sufficient to cover the costs of housing in the communities surrounding military bases. In the 1995 SAF, over half of the spouses surveyed indicated moderate or great concern about the cost of housing (Rosen and Durand, 2000a). As a consequence, military families usually live some distance away from the base (Caliber Associates, 1996, 1998) and frequently complain about the quality of the neighborhoods in which they reside (Rosen and Durand, 2000a).

Research on the effects of housing quality and neighborhood on marital outcomes has been sparse and limited to cross-sectional surveys. In two such studies, satisfaction with housing has been associated with the well-being of military spouses but not with their perceptions of marital satisfaction (Paulus et al., 1996; Rosen, Carpenter, and Moghadam, 1989). However, in research on civilian marriage that examined a wide range of communities, the quality of a couple's housing and neighborhood has been linked to marital communication and

satisfaction (Cutrona et al., 2003) and to marital dissolution, although the effects on dissolution appear to be mediated entirely through husbands' income (South, 2001).

Access to Services

In general, service members are likely to have better access to services like child care and health care than are comparable members of the civilian population. For example, the military child care system is the largest employer-sponsored child care system in the country (Zellman and Gates, 2002), and military personnel and their spouses generally rate their experiences with this system positively (Rosen and Durand, 2000a). Since the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) program was revised in the late 1980s, health care for dependents of military personnel has been provided by the Tricare program, which increased access to and satisfaction with health care services among those who enrolled (Sloss and Hosek, 1993).

Thus, military families may be relatively advantaged compared with civilian families in these domains. This may explain why some research on the effects of family illnesses among military families has failed to observe effects on marital satisfaction that might be expected from research in civilian marriages. For example, among civilian marriages, a chronic illness in a child is a strong predictor of marital distress (Berge and Patterson, 2004; Quittner et al., 1998). Yet, in a recent study examining the effects of having a handicapped child on the well-being of service member parents, those with a handicapped child experienced no differences in marital satisfaction relative to those without a handicapped child, despite experiencing more negative outcomes on a number of different dimensions of mental health (Watanabe et al., 1995). It is possible that the improved access to services in the military provides something of a buffer against the stress of family illness for military families, and this effect may explain the resilience of military marriages affected by deployments as well.

Separation from Friends and Family

Although the military provides the families of service members with sources of support, it simultaneously separates military families from nonmilitary sources of support by requiring that service members and their dependents relocate away from family and friends. That separation can itself be a source of stress for military couples. In the 1995 SAF, for example, 36 percent of respondents indicated that difficulty maintaining contact with extended family was a source of moderate or severe stress (Rosen and Durand, 2000a). In civilian marriages, distance from social networks has been associated with worse outcomes for families (e.g., Amato, 2004; Fingerman, Hay, and Birditt, 2004; Henly, Danziger, and Offer, 2005; Kearns and Leonard, 2004). Among military marriages, where most of the population has been separated from friends and family, the contribution to marital outcomes is unknown.

Discussion

The sources of stress and support that have been emphasized in existing surveys of quality of life for military families do not exhaust the nonmilitary events and circumstances that may contribute to the outcomes of military marriages. On the contrary, in addition to the sources of stress reviewed above, military couples are likely to experience the additional acute and chronic stressors that all married couples face (e.g., illnesses, conflicts with friends, strains of parenthood, etc.). The pressing challenge for understanding military marriages lies less in describing those elements than in understanding the net effect they may have on the outcomes of military marriages. As this section makes clear, research linking stress and support in the context of military marriage to the outcomes of military marriages has been rare. In general, we can expect that more support is good for military marriages, and more stress is bad, but even these intuitive generalizations are undermined by some inconsistencies in the existing data, suggesting that more research is needed that directly addresses these issues. Most important, there has been no research examining how nonmilitary circumstances affect how military couples adapt to the stress of military service. In sum, important questions remain to be answered in this area.

Adaptive Processes

To date, there has been no research on effective interaction or communication between spouses in military marriages, a significant gap in research on military families. On the contrary, the only dyadic process that has received any systematic attention from researchers has been intimate partner violence (for a review, see Marshall, Panuzio, and Taft, 2005). Within civilian marriages, nearly 50 percent of engaged and newlywed couples report engaging in some form of intimate partner violence (Lawrence and Bradbury, 2001; O'Leary et al., 1989). Rates tend to be lower in research on more established marriages; this is probably because violence in young marriages is an especially powerful predictor of subsequent divorce (Rogge and Bradbury, 1999). Research that has compared the prevalence of intimate partner violence in military and civilian samples finds similar rates in both populations (Campbell et al., 2003; Heyman and Neidig, 1999). However, additional analyses that examined severe acts of violence in particular found significantly higher rates in a representative sample of military personnel (Heyman and Neidig, 1999). There is no reason to expect that intimate partner violence is any less destructive in military marriages than it is in civilian marriages (Marshall, Panuzio, and Taft, 2005).

The focus of most research on intimate partner violence in military marriages has been on identifying correlates and causes of violent behavior. To the extent that intimate partner violence can be considered a severely maladaptive marital process, the organizing framework presented here suggests that these behaviors will most likely observed in spouses whose enduring qualities make them more prone to violence, in poorer-quality relationships, and under circumstances that constrain spouses' ability to interact in more effective ways. Research on intimate partner violence in military marriages has supported all these ideas. With respect to qualities of the partners, several surveys of married male service members have found higher rates of self-reported intimate partner violence among individuals who are nonwhite, younger, have a history of depression or violent behavior, and abuse alcohol (N. S. Bell et al., 2004; McCarroll et al., 2003; Rosen et al., 2003). With respect

to qualities of the relationship, one of these same surveys reports that, independent of their individual characteristics, those reporting lower marital satisfaction report higher rates of intimate partner violence (Rosen et al., 2003).

With respect to situational factors, research has examined a number of circumstances that make aggressive behavior between partners more or less likely. For example, to examine the effects of deployment on intimate partner violence, one of the strongest studies in this area surveyed a random sample of 26,835 married active Army men and women who were either deployed or nondeployed between 1990 and 1994 (McCarroll et al., 2000). Analyses revealed that, controlling for the effects of individual characteristics, rates of severe violence against an intimate partner were significantly higher among those who had been deployed, and within that group rates were higher the longer the length of the deployment. This result is consistent with the current framework: To the extent that long deployments challenge marriages, spouses prone to engage in violent behavior will have more reason to do so after they have been deployed. In addition to showing that a history of alcohol abuse is associated with higher rates of violence, research drawing upon the Army Health Risk Appraisal Survey reveals that abusers are especially likely to be under the influence of alcohol at the time that abuse occurs (N. S. Bell et al., 2004). The presence or absence of supervision also seems to play a role, as rates of intimate partner violence are higher for those who live off-base than for those who live on-base (McCarroll et al., 2003).

Among civilian marriages, rates of intimate partner violence are similar for women as for men, although certainly the consequences of men's and women's violent behavior are not the same. Research on intimate partner violence among military marriage has examined female service members as both victims of abuse and as perpetrators. One survey of 616 active military women reports that 21.6 percent report being victims of intimate partner violence while serving, with enlisted personnel reporting higher rates than officers (Campbell et al., 2003). To examine predictors of abusive behavior in female service members, a random sample of 1,185 female soldiers married to civilian husbands were asked to report on their own violent behavior in the marriage.

Consistent with the idea that qualities of the relationship are associated with violence, spouses of unemployed husbands reported engaging in higher rates of violent behavior than did spouses of employed husbands (Newby et al., 2003).

As a whole, research on intimate partner violence in military marriage supports the current framework in linking these maladaptive behaviors to qualities of the spouses, their relationship, and their circumstances. Yet, without research that directly examines more normative aspects of marital functioning, strong conclusions about the role of adaptive processes in military marriages remain premature.

Barriers and Alternatives

There are two ways to examine the role of alternatives and barriers in marital dissolution. One is to assess these variables directly by asking spouses to describe them. The second is to infer the presence of barriers and alternatives from other known features of the couple, e.g., geographic location. Although there has been very little research relevant to the role of barriers and alternatives in the dissolution of military marriages, we are aware of unpublished data that adopted this second approach. In a "Talking Paper on Divorce in the Air Force," prepared on October 28, 1997, Boucher and Catchings of the Air Force Personnel Center (AFPC) computed rates of divorce among Air Force service members within each state to which they were assigned and compared those rates to the local divorce rates in those states. In those analyses, enlisted members and officers with the highest number of days spent on temporary duty (TDY) were no more likely to experience divorce than those with the lowest rates of TDY.

However, there was a strong correlation between Air Force divorce rates and local divorce rates. Given that the demands on Air Force service members did not differ substantially across states, and given that selection criteria for the Air Force are the same across states, the authors interpreted this association to be evidence that the decision to divorce is powerfully affected by local laws that make divorce more or less attractive. For example, in most states, ownership of personal property

in the marriage is determined by common law, i.e., how the property was originally titled. Some states, however, have adopted community property laws that declare all the property in the marriage to be co-owned by both partners. Couples contemplating divorce in community property states are thus protected financially in ways that couples living in common law states are not. In fact, unpublished Air Force data report higher divorce rates in community property states than in common law states, consistent with the idea that couples living in community property states faced fewer barriers to divorcing. It is premature to draw strong conclusions based on unpublished data from a single service. Yet this finding, and the history of theory and research on the role of barriers and alternatives in civilian marriages, provide a compelling argument for further analyses of military divorce rates within specific geographical regions.

Summary and Conclusions

This literature has not accumulated enough results to support a coherent model of military marriages or how they function. Nevertheless, two general premises have received support from a number of directions.

Service members represent a population that should be highly vulnerable to experiencing adverse marital outcomes. Although the most vulnerable individuals (e.g., those with histories of substance abuse, psychopathology, or criminal behavior) are excluded from serving in the military, those who do enlist tend to be the most vulnerable of the eligible population in terms of age, ethnicity, and potential for career advancement in the civilian labor market. Once in the military, service members marry younger and have children sooner than their civilian counterparts. These relatively young couples then face financial stress and the challenge of finding affordable housing. Within civilian populations, every one of these characteristics predicts increased risk of marital dissolution.

With these documented sources of vulnerability, existing models of marriage suggest that military couples should be ill equipped to cope with the regular relocations, lengthy deployments, and physical

threats that military service entails. It is therefore especially noteworthy that *there is no consistent evidence that the normal, expected demands of military service lead to higher rates of marital dissolution in military couples*. On the contrary, the consequences of military service for military marriages appear to depend on the specific outcomes of military service for the service member. Those who are exposed to combat or other trauma tend to suffer in multiple ways, and their marriages suffer as well. In particular, service that results in disability or mental health problems (e.g., depression or PTSD) puts unexpected strains on marriage, and marriages tend to deteriorate as a result. The majority of service members, however, do not experience these adverse outcomes. Absent these specific sources of strain, merely serving in the military or being deployed has not been reliably linked to poorer marital outcomes, and, as the results of the current analyses reveal, may in fact lead to reduced rates of marital dissolution.

How can we explain the relative vulnerability of military marriages on one hand, and the relative resilience of these marriages on the other? One way to reconcile these two observations is to acknowledge the powerful role that military institutions and policies may play in supporting military families. Military couples have access to sources of support that comparable civilian couples often lack. Whereas civilian couples often struggle to obtain adequate health care and child care, military families have ready access to these services. Whereas civilian couples must create their own communities (especially in urban centers), military couples are often embedded in a supportive community of families coping with the same stresses. Whereas civilian couples must struggle to find adequate and meaningful employment, service members have stable employment that may be interpreted as fulfilling an important patriotic duty. Finally, whereas the stresses faced by civilian couples can strike unexpectedly, leaving couples to seek out sources of assistance, the major stresses faced by military couples are expected, and the military makes sources of assistance readily available. All these sources of institutional support may compensate for the relative vulnerability of military marriages, so that when the stresses of military service are at their peak, most couples may be able to cope effectively. None of the research reviewed in this chapter has exam-

ined directly how military institutions affect the way military couples cope with stress. Nevertheless, the perspective outlined here is consistent with the existing literature. Moreover, this perspective is consistent with research on civilian marriage showing that, although stress is generally harmful to marriages, contexts that promote adaptive coping with stress can protect couples from these harmful effects (Karney, Story, and Bradbury, 2005).

Aside from examining the effects of military stress, the assembled research on military marriage has addressed few of the specific paths suggested by the integrative framework presented in Chapter Two. When military research has addressed marriage, the primary focus has been describing the marriages of service members. To that end, research drawing from focus groups and surveys has listed the enduring and emergent characteristics of military spouses, the nature of the stresses and challenges that they face, and the sources of strain and support in the broader context within which they live. Yet the associations among these variables, and the independent and interactive effects of these variables on the outcomes of military marriages, have been studied only rarely. Two paths in the model have received consistent support. Among military marriages, just as in civilian marriages, physical and mental health problems predict adverse marital outcomes. The predictors of intimate partner violence also appear to be the same in military marriages as in civilian marriages, i.e., stress, aggressive personalities, and low marital quality. Yet some of the strongest predictions derived from research on civilian marriages have yet to be examined within a military context. The following are noteworthy examples:

- There is no published research on the role of personality in military marriages, despite the fact that the military is likely to select for some personality traits over others.
- There is no published research on marital processes other than physical aggression, leaving the processes through which couples adapt to military stress an entirely open question.
- Although the absence of obvious deployment effects points toward the resilience of military families, no research has directly examined either the sources of this resilience or how the qualities of

military couples may interact with the available sources of support and assistance to account for marital outcomes.

- Although some research suggests that marital quality may be a stronger predictor of performance and retention than marital dissolution, very little research has examined the quality of military marriages as a dependent variable. To the extent that research on civilian marriages generalizes to military marriages, the variables that account for marital satisfaction and marital dissolution may be very different.
- Although research describing military marriages shows substantial heterogeneity associated with gender, rank, service, and geographical location, no research has attempted to explain these differences systematically or to develop models accounting for the implications of these differences for military marriages.

In sum, research on military marriage remains in an early stage of development, leaving more questions than answers. At the same time, what research that has been conducted is consistent with the broader literature on civilian marriages. The next chapters of this monograph seek to build upon the existing theoretical and empirical foundation to estimate the effects of deployment on military marriages more precisely.

CHAPTER FOUR

Trends in Marriage and Divorce: Reanalyzing Military Service Personnel Records

Problems in Existing Data on Marriage and Divorce in the Military

On June 8, 2005, prominent articles in several national news outlets (e.g., McIntyre, 2005; Zoroya, 2005) reported that divorce rates in the Army had jumped sharply since the terrorist attacks of September 11, 2001. Throughout the rest of that year, other news organizations repeated the story, reporting increases in divorce ranging from 49 percent to 100 percent (e.g., Fiore, 2005; Jaffe, 2005; Worland, 2005). Despite variability in the reported size of the increase, the broader outlines of these stories were consistent across outlets. In every case, reporters attributed the rise in divorce to the difficulties that families face when male soldiers are deployed and their wives are left alone to maintain the home. As the article in *USA Today* put it, "The stress of combat, long separations and difficulty readjusting to family life are the key reasons for the surge" (Zoroya, June 8, 2005). More recently, the *New York Times* echoed this theme on the front page, writing that "Military deployments have a way of chewing up marriages, turning daily life upside down and making strangers out of husbands and wives" (Alvarez, July 8, 2006). In other words, reports in the media land solidly behind the stress hypothesis as the explanation for current patterns and trends in military marriage.

Yet despite the apparent consensus on the phenomenon and its explanation, the existing data on the state of marriage and divorce in the military may not support strong generalizations or conclusions. As

Martin and McClure (2000) have pointed out, despite the widespread belief that military stress, and deployment in particular, leaves military marriages vulnerable to divorce, "evidence to support a strong association between deployment and divorce is lacking" (p. 10). One obstacle to estimating this effect is the fact that couples at greatest risk for divorce may leave the service before ending their marriages. Estimates of divorce based solely on current members are therefore likely to underestimate the true effects of military service on marriage. A second obstacle is the difficulty in finding an appropriate comparison group against which to evaluate patterns and trends within the military. Because the armed forces represent a highly select subset of the population, comparisons with the general civilian population would be inappropriate and even misleading. Yet the exclusive focus on military data leaves open the question of whether divorce rates among military families are in fact higher than should be expected. A third obstacle is the fact that the nature of military service, and the demands that service members must face, have been changing over time. Thus, descriptions of the military from even as recently as 15 years ago may not generalize to describe the military today.

The data that inspired the news reports during the summer of 2005 addressed some of these obstacles. In briefings prepared by the Defense Manpower Data Center (DMDC) and presented to Dr. David Chu, Undersecretary of Defense for Personnel and Readiness, on June 13 and August 8, 2005, service personnel records, which contain data on marital status, were used to estimate trends in rates of divorce between FY1995 and FY2004. A number of strengths of these analyses justify the attention they received when they were made public. First, by emphasizing trends over time, these analyses obviate the need for a comparison group because each service was compared only to itself. Second, by examining ten years of data, these analyses could address whether patterns and trends in divorce had changed since the beginning of current military operations in 2001.

Yet, despite these strengths, the analyses conducted in 2005 were nevertheless limited in significant ways. First, the DMDC analyses employed definitions of marriage and divorce that some might consider questionable. Conversations with DMDC revealed that their

analyses coded as "married" all service members who indicated that they were married or legally separated, despite the fact that legal separations are considered by most marital researchers and demographers to be a form of marital dissolution (e.g., Castro-Martin and Bumpass, 1989). Moreover, service members who were widowed were included in the "divorced" category, potentially inflating the estimates of actual divorces.

Second, the DMDC analyses examined trends in divorce but not simultaneous trends in marriage. Data on both outcomes are a prerequisite for evaluating selection effects. Without data on marriage and divorce, it remains unclear whether or not any changes in divorce rates are simply the result of changes in the proportion of service members getting married.

Third, to address the critical issue of whether deployment increases the risk of divorce, the DMDC analyses examined data only from FY2004, comparing the risk of divorce in service members who were or were not deployed during that year. This approach greatly oversimplifies the ways that deployment may affect marriages. For example, there is good reason to believe that risk for divorce is highest after deployment has ended. Also, service members are now subject to multiple deployments of varying length, each of which may affect risk of divorce in different ways. To acknowledge these complexities, a more appropriate analysis would examine how the cumulative experience of deployments affects the risk of divorce longitudinally. However, this requires linking the records of individual service members across multiple years of data, and the DMDC analyses did not do this. Perhaps as a result, the DMDC analyses actually indicate that, among enlisted men in the active Army, divorce rates for those who experienced deployment were slightly lower than the divorce rates for those who had not been deployed. This did not prevent every news report referring to these analyses from describing exactly the opposite.

Fourth, the DMDC analyses examined service records only from active personnel, ignoring the reserve component. This is a serious omission because the demands on the reserve component are greater now than they have ever been, even though services within this component often lack the support available to the active component. Recogniz-

ing the increasing importance of the reserve component to modern military actions, Pryce, Ogilvy-Lee, and Pryce (2000) have written, "Any contemporary discussion of military family issues must include the families of the National Guard members and Reservists' families" (p. 27). The failure to examine trends in marriage and divorce for these components risks leaving an important part of the story of modern military families untold.

In sum, the nature and extent to which marriage and divorce affect military families remain an open question. Despite news reports to the contrary, existing analyses have yet to confirm the link between deployment and increased risk of marital dissolution. The continued absence of an accurate description of the problems experienced by military families prevents efforts to evaluate possible explanations or existing interventions.

Overview of Trend Analyses

The analyses described in this chapter were designed to address the limitations of existing descriptions of marriage and divorce in military families. Like those reported by DMDC in 2005, the current analyses draw upon service personnel records from the past ten years to describe marriage and marital dissolution for the entire military population during this period. Using the same data source allowed us to replicate the prior analyses while refining them in several important ways. First, our analyses used standard definitions of marriage and marital dissolution (described below). Second, we include an additional year of data (FY2005), allowing a better view of trends since the start of the military operations in Afghanistan at the end of 2001. Third, we examine patterns and trends in marriage as well as marital dissolution, offering insights into possible selection effects as well as stress effects. Fourth, we address not only the active component but also personnel in the reserve component, including the National Guard. Fifth, to offer the most accurate estimates of the effects of deployment on subsequent marital outcomes, the analyses described in Chapter Six move beyond purely descriptive statistics, using time-varying hazard models.

In general, the analyses described below are aimed at identifying *patterns*, i.e., stable differences in marriage and marital dissolution across groups, and *trends,* i.e., notable changes in the experience of marriage and marital dissolution across the past ten years. With respect to both these results, the analyses address rates at which service members report being married, getting married, and ending their marriages. For each of these behaviors, rates are reported separately for each service, for each gender, for each rank (i.e., officers vs. enlisted), and for each component (i.e., active vs. reserve).

Methods

The Data Set

The current analyses examine the past ten years of service personnel records from every service of the military. Each service maintains these records in an idiosyncratic way, although a new system will soon be online that tracks these data in a common database with common descriptors. In the absence of that centralized database, the services now send monthly extracts of their service records to DMDC, where the data are assembled into forms that can be analyzed.

For this project, we asked DMDC to generate quarterly summaries of the monthly extracts, beginning with the first quarter of FY1996 and ending with the last quarter of FY2005. These summaries include data on every person who has served in the Armed Forces during that period, a population of over 6 million individuals. The interval between 1996 and 2005 was chosen because it offers a reasonable window into the patterns and trends evident in the five years prior to 2001 and a similar view of the five years since then, allowing comparisons between periods of similar length before and after the attacks of September 11, 2001.

Personnel records include considerable data on each service member. Only the most relevant variables were included in the data set assembled for these analyses. Many of the variables in these records are stable from month to month and change only when the service member reports a change in status (i.e., getting married, getting divorced,

having a child) to the appropriate personnel office. Thus, the transitions of greatest interest here are all reported at the discretion of the service member. That said, it is in the interests of the service member to have his or her accurate status reflected in the personnel record because these records determine benefits and level of pay. Thus, we may have reasonable confidence in the transitions identified for each individual member, although there are exceptions to this confidence, as noted later.

It is worth highlighting that personnel records provide data on service members only while they are in the service. Personnel who leave the service before experiencing a transition are therefore missing from these data, even though it can be expected that the effects of military service on marital outcomes may well extend beyond the length of service itself. The data are therefore right censored or suspended, and appropriate controls for right censoring are implemented in the analyses of deployment effects (e.g., Willett and Singer, 1995). Nevertheless, the fact that the descriptive analyses address only the transitions that occur while in the service means that the trends and patterns reported here are likely to underestimate the true effects of military service on marital outcomes throughout the lifetime of those who have served.

Defining Marital Status Categories

The critical variable for these analyses is a single item in the personnel record describing marital status. All the services code for marital status in the same way, using one of the following codes: M = Married; D = Divorced; A = Annulled; I = Interlocutory (i.e., in the middle of legal proceedings but not yet officially granted a divorce); L = Legally Separated; N = Never Married; W = Widowed; Z = Unknown.

Only those individuals with a status code of M were treated as married in the analyses described in this chapter. To include any other codes in this category, as prior analyses of these data have done, would be to combine those who are maintaining their marriages with those whose marriages are in various stages of disruption. In contrast, to assess the end of military marriages, the status code of D for "divorced"

would be too restrictive. In the broader literature on civilian marriage, descriptions restricted to divorce are known to underestimate marital disruption because a substantial portion of marriages end through legal separation and other means even if they never register as a divorce (11 percent, according to Castro-Martin and Bumpass, 1989). Throughout the current monograph, we use the term *marital dissolution* to refer collectively to all the ways that marriages can end by choice—through divorce, legal separation, or annulment. Accordingly, marriages in these analyses were considered dissolved if the marital status of a service member transitioned from M (married) to D (divorced), A (annulled), I (interlocutory), or L (legally separated). Marriages that ended in the death of a spouse (i.e., widowed) were not counted as dissolutions.

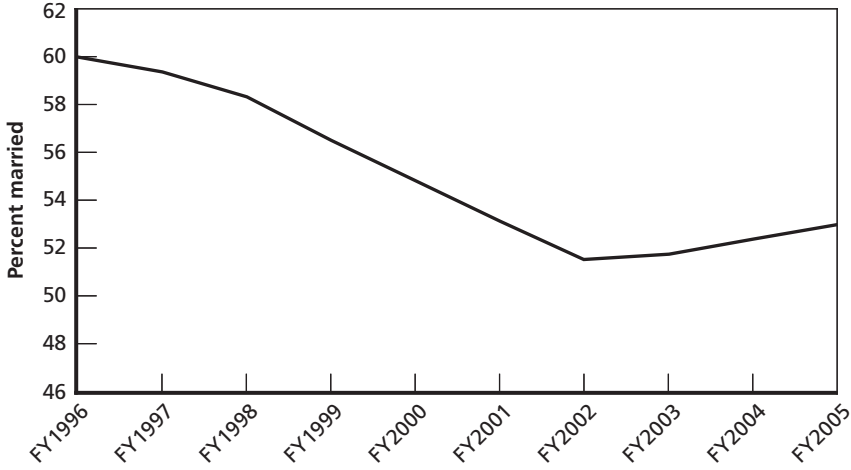
Patterns and Trends in Marriage Within the Active Component

Percentage Married

For each year, we computed the percent of the active component currently married as the number of married individuals at the start of the fiscal year divided by the number of individuals in the service. A 2003 profile of military demographics reported that just over half of those serving in the military were currently married (Military Family Resource Center, 2003). The current analyses replicate that result and place it into perspective. As Figure 4.1 reveals, the percentage of the force that is married dropped steadily from a height of 59.9 percent in 1996 to a low of 51.5 percent in 2002, and has been increasing gradually since then. In FY2005, 52.9 percent of military personnel were married.

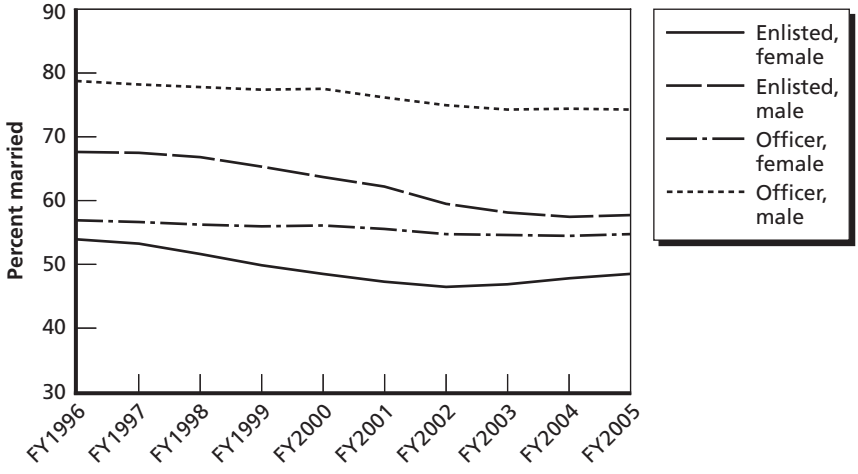
Breaking down rates of current marriage by gender, rank, and service paints a more nuanced picture, but does not change the overall trend. As revealed in Figures 4.2 through 4.5, all active services experienced a gradual drop in the percent of currently married personnel from 1996 to 2002, with a slowing decline or a slight increase since then. However, whereas the trends are similar across the services, there

Figure 4.1
Percentage Married Across All Active Services



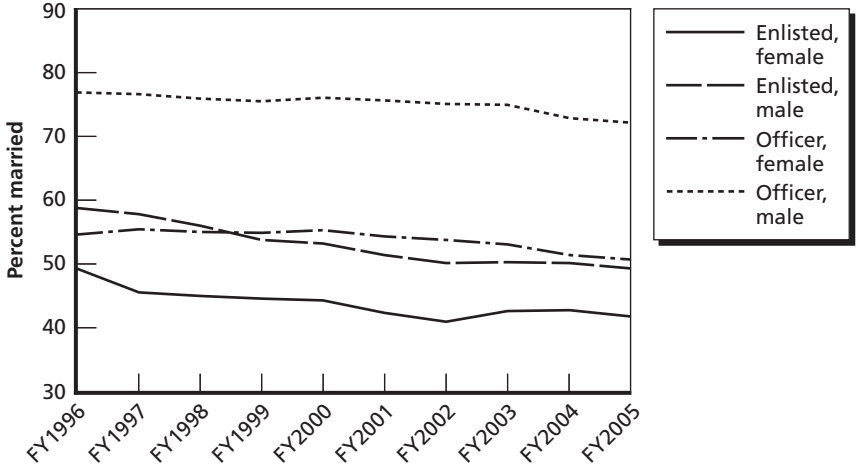
RAND *MG599-4.1*

Figure 4.2
Percentage Married in the Active Army



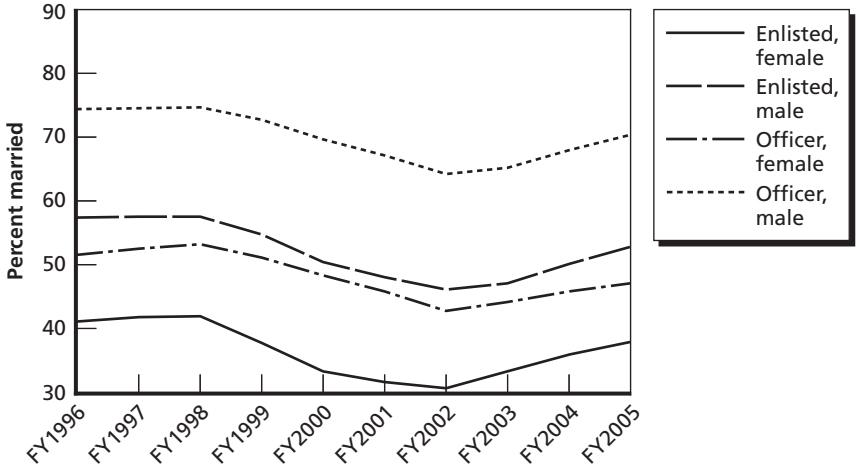
RAND *MG599-4.2*

Figure 4.3
Percentage Married in the Active Navy



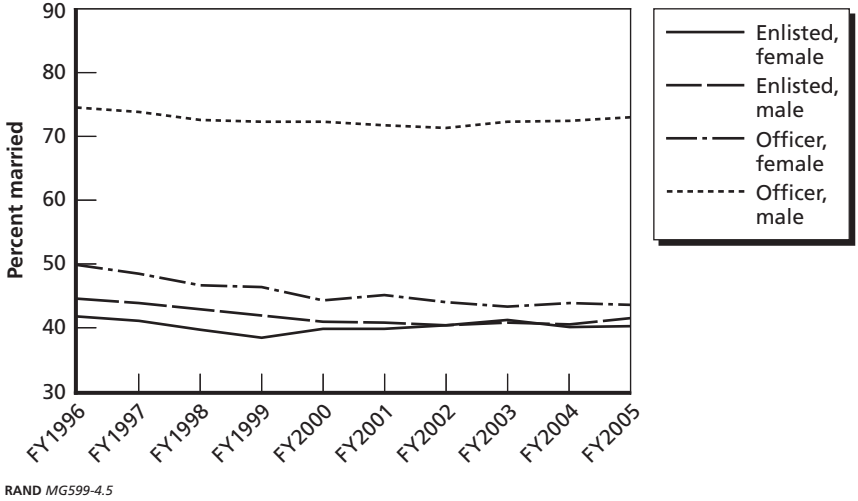
RAND *MG599-4.3*

Figure 4.4
Percentage Married in the Active Air Force



RAND *MG599-4.4*

Figure 4.5
Percentage Married in the Active Marine Corps



RAND *MG599-4.5*

are stable differences across genders and ranks. As has been reported elsewhere (e.g., Military Family Resource Center, 2003), women and enlisted members are substantially less likely than men and officers to be married, and this holds true across time. In FY2005, 42.8 percent of enlisted women, 51.0 percent of female officers, 51.0 percent of enlisted men, and 72.5 percent of male officers were married across all the services.

Differences associated with rank and gender are smaller in the Marine Corps than in the other services, probably because the overall percentage of Marines who are married is smaller as well.

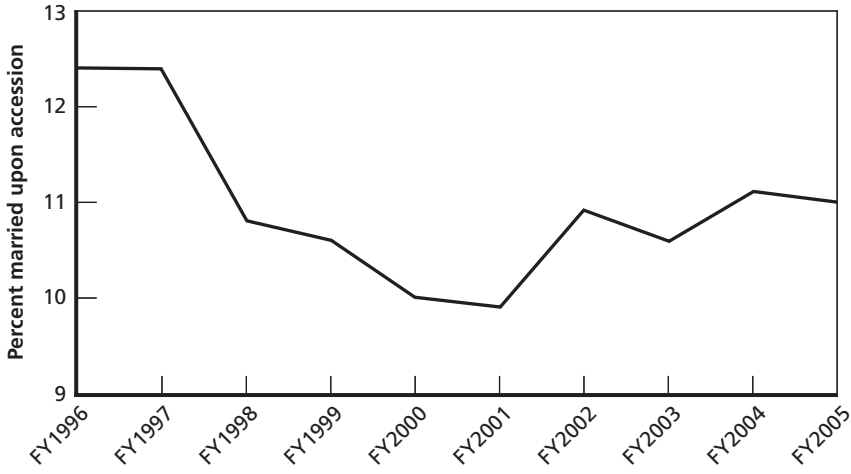
Marital Status upon Accession

The proportion of the force that is currently married can be a misleading indicator of recent trends in marriage, because that proportion combines those who have recently married with those in longstanding marriages. Many of the same marriages are therefore represented across fiscal years, accounting for the stability of these figures over time. For the purposes of evaluating possible changes in the perceived benefits of being married within the military, a more useful indicator is the

rate of marriage among individuals entering the military each year. To estimate this proportion, we divided the number of married individuals entering the force during each fiscal year by the total number of individuals entering during that year. As Figure 4.6 reveals, the trend in rates of marriage upon accession closely follows the trend in rates of current marriage for the military as a whole. That is, rates of marriage among entering personnel fell from a peak of 12.4 percent in FY1996 to a low of 9.9 percent in FY2001, and have been rising gradually since then. In FY2005, 11.1 percent of entering military personnel were married.

The trend presented in Figure 4.6 masks considerable heterogeneity. Because officers tend to be older, they are substantially more likely to be married upon accession, and this holds true across time, across services, and for both genders. In FY2005, 17.7 percent of entering officers were married, compared with 10.5 percent of entering enlisted service members. Independent of this overall difference, however, changes in rates of marriage upon accession have been more pronounced for

Figure 4.6
Percentage Married upon Accession Across All Active Services



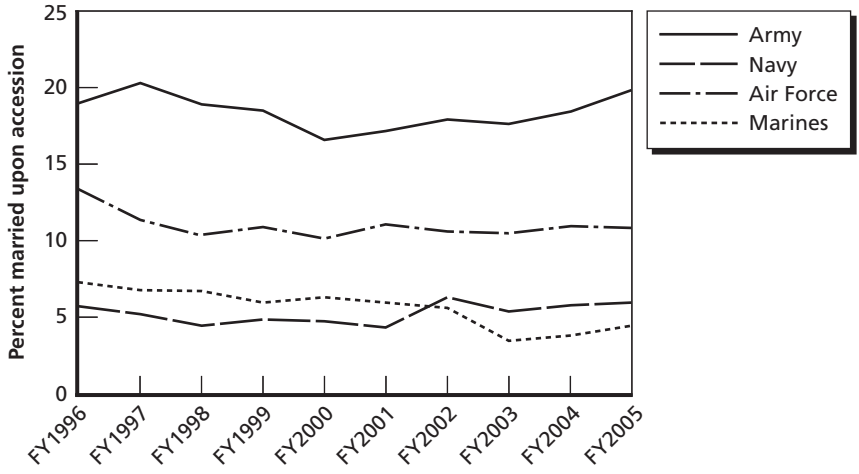
RAND *MG599-4.6*

officers than for enlisted service members, and this generalization holds true for both genders. Figures 4.7 through 4.10 illustrate this point.

As shown in Figure 4.7 and Figure 4.8, rates of marriage upon accession have been generally stable among enlisted service members of both genders. After falling between FY1997 and FY2000, the rate has been rising somewhat for enlisted women and men in the Army and Navy, with rates over the past several years more stable in the Marines and Air Force. In FY2005, married personnel comprised 16.8 percent of entering enlisted service members in the Army, 9.9 percent in the Air Force, 5.7 percent in the Navy, and 3.0 percent in the Marines.

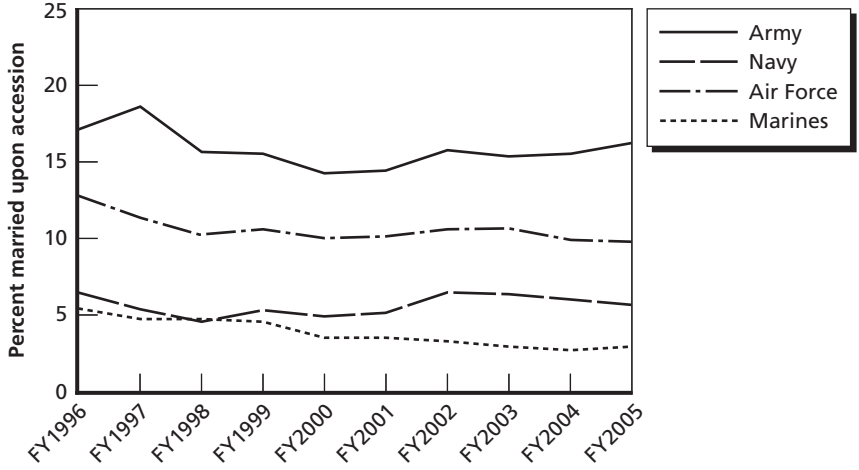
As shown in Figures 4.9 and 4.10, rates of marriage upon accession have been declining among active officers of both genders. Two questionable aspects of these data deserve mention. First, closer examination of the elevated rate for male officers in the Air Force during FY 1996 revealed that, although the number of married accessions during that year is consistent with later years, the number of total accessions that year is unusually low. This may represent an error in the

Figure 4.7
Percentage Married upon Accession, Active Enlisted Women



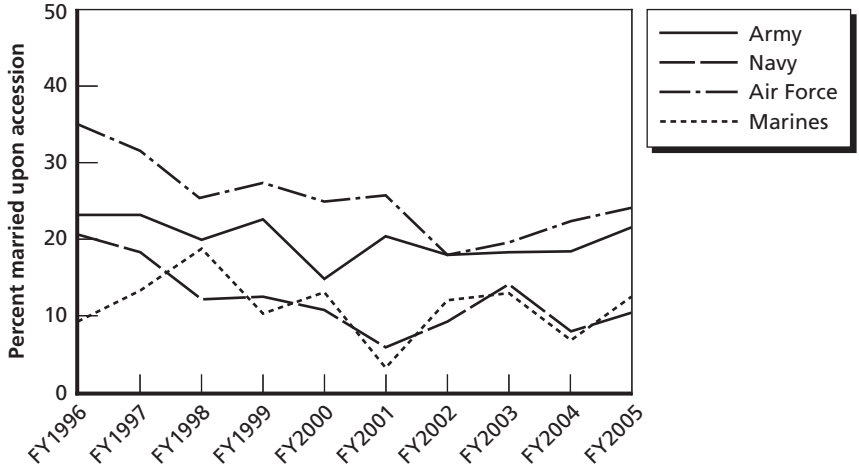
RAND *MG599-4.7*

Figure 4.8
Percentage Married upon Accession, Active Enlisted Men



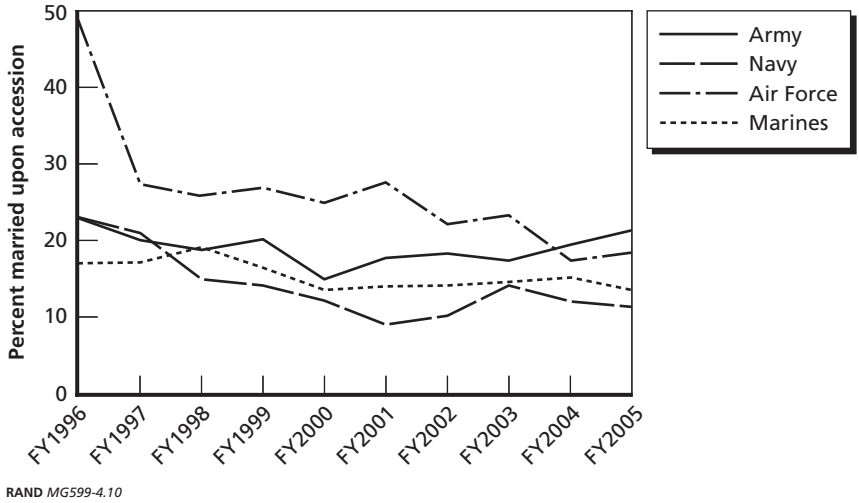
RAND *MG599-4.8*

Figure 4.9
Percentage Married upon Accession, Active Female Officers



RAND *MG599-4.9*

Figure 4.10
Percentage Married upon Accession, Active Male Officers



RAND *MG599-4.10*

database. Second, the highly variable rates across time for female officers in the Marines are due to the fact that the number of married accessions for female officers in the Marines is very low (two to eleven each year), rendering the rates unstable. Nonetheless, the overall pattern in these figures suggests that rates of marriage among entering officers of both genders declined between FY1996 and FY2001 in all the services. Since FY2001, rates of marriage among entering female officers have increased in all the services of the active component, although they have not yet reached 1996 levels. Rates of marriage among entering male officers have increased only in the Army and the Navy; rates of marriage upon accession have continued to decline among male officers in the Marines and Air Force. In FY2005, married personnel comprised 21.2 percent of entering officers in the Army, 19.8 percent in the Air Force, 13.3 percent in the Marines, and 10.9 percent in the Navy.

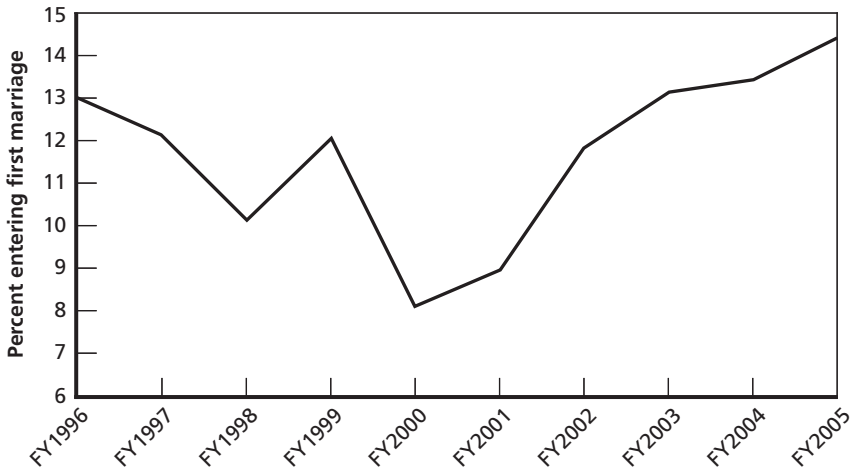
Rates of First Marriage While in the Service

A second window into possible changes in the perceived benefits of military marriage is the rate at which initially unmarried service members get married while in the service. To the extent that the perceived

benefits of being married change over time, so should the rate at which unmarried service members make the decision to get married. Among unmarried service members are those who have never been married and those who have previously experienced marital dissolution. The never married, whose views of the costs and benefits of marriage are not colored by prior experiences with marriage, offer the clearest picture of how the considerations affecting the decision to marry may be changing over time.

To describe transitions into marriage within this group, we computed the percentage of all service members indicating a status of N ("never married") at the start of the fiscal year that indicated a status of M ("married") by the end of the fiscal year. As Figure 4.11 reveals, trends in the rate at which unmarried service members entered their first marriages mirror and exaggerate the trends described for overall rates of marriage (see Figure 4.1) and rates of marriage upon accession (see Figure 4.6). Across genders, ranks, and services, rates of entering first marriages while in the service fell from 13.0 percent in FY1996

Figure 4.11
Percentage Entering First Marriage Across All Active Services



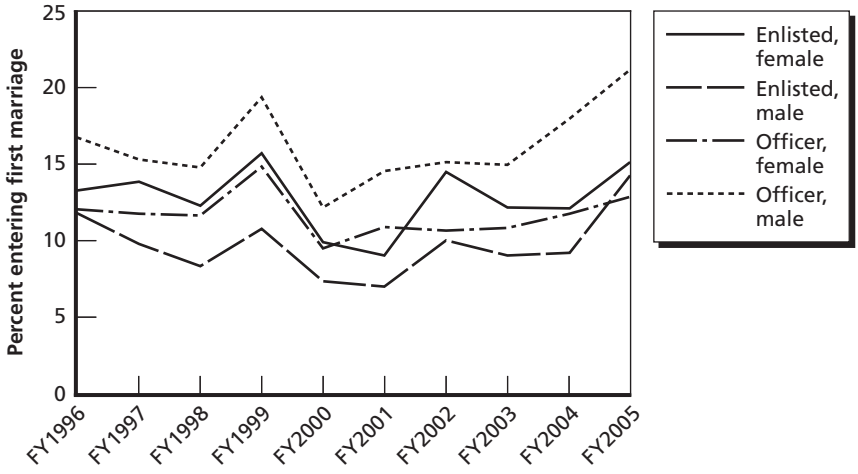
RAND *MG599-4.11*

to a low of 8.1 percent in FY2000. Since then, rates of entering first marriage have steadily increased each year, such that in FY2005, 14.4 percent of previously unmarried service members became married, the highest rate of transition to marriage observed in the past decade. The shape of this trend is virtually identical when calculated from rates that include remarriages as well as first marriages.

Within the general trend described in Figure 4.11, FY1999 stands out as an anomaly—a year during which rates of entry into first marriage were higher than would be expected from the years before and after. As revealed in Figures 4.12 through 4.15, this same anomaly appears in the analyses of transitions into first marriage for both genders, for enlisted and officers, and across each of the four services. Aside from that anomaly, the general trend across each service is a decline in the transition into first marriage between FY1996 and FY2000, with increasing rates of first marriage since then.

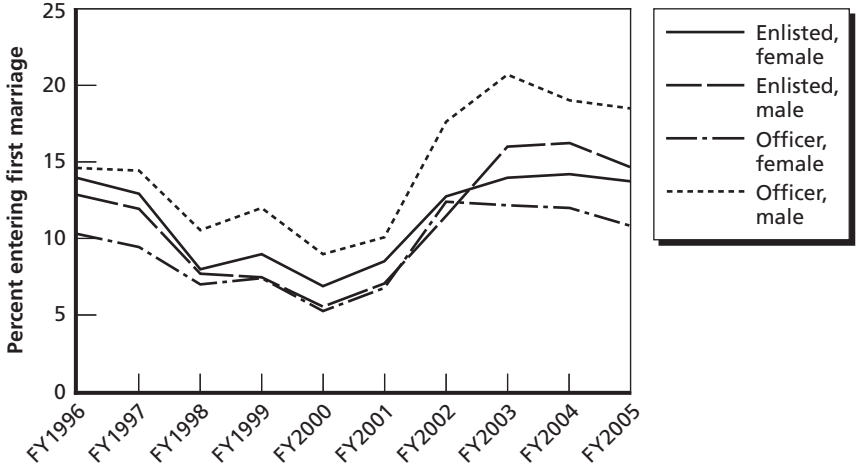
Because the active Army is the largest of the services, it most closely reflects the trends observed in the military as a whole. It is

Figure 4.12
Percentage Entering First Marriage in the Active Army



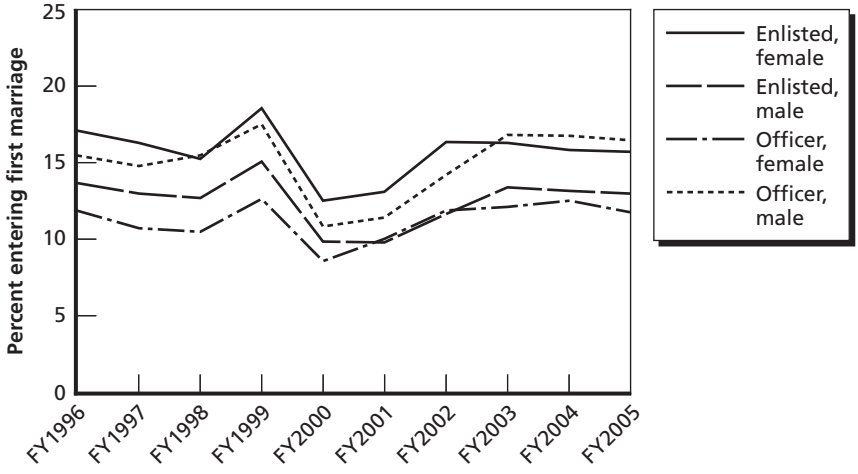
RAND *MG599-4.12*

Figure 4.13
Percentage Entering First Marriage in the Active Navy



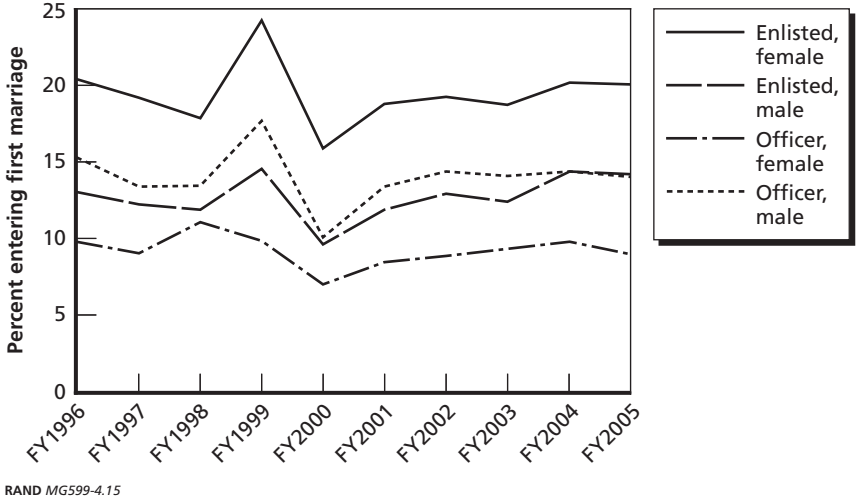
RAND *MG599-4.13*

Figure 4.14
Percentage Entering First Marriage in the Active Air Force



RAND *MG599-4.14*

Figure 4.15
Percentage Entering First Marriage in the Active Marine Corps



RAND *MG599-4.15*

worth noting that male officers enter first marriages at substantially higher rates than enlisted men, whereas female officers transition to first marriage at rates close to—or, in recent years—slightly less than enlisted women. In FY2005, unmarried service members in the active Army were married at rates of 21.2 percent for male officers, 14.3 percent for enlisted men, 12.8 percent for female officers, and 15.1 percent for enlisted women.

After declining from FY1996 to FY2000, rates of transition to first marriage increased sharply for all ranks and genders of the active Navy through FY2003 and have been relatively stable in the two years since then. In FY2005, unmarried service members in the active Navy were married at rates of 18.4 percent for male officers, 14.7 percent for enlisted men, 10.8 percent for female officers, and 13.7 percent for enlisted women.

In contrast to the active Army and Navy, where rates of transition into first marriage are higher than they have been in a decade, rates of transition into first marriage within the Air Force are about where they were a decade ago. Nevertheless, the shape of the trend for the Air Force matches the trend for the Navy: increases in rates of first

marriage between FY2000 and FY2003 followed by stability across the subsequent two fiscal years. In FY2005, unmarried service members in the active Air Force were married at rates of 16.4 percent for male officers, 12.9 percent for enlisted men, 11.7 percent for female officers, and 15.6 percent for enlisted women.

Similar to the active Air Force, rates of transition into first marriage in the Marine Corps, after declining overall between FY1996 and FY2000, have steadily returned to 1996 levels. In FY2005, unmarried service members in the active Army were married at rates of 13.9 percent for male officers, 14.1 percent for enlisted men, 8.8 percent for female officers, and 19.9 percent for enlisted women.

Discussion: Marriage in the Active Military

Regardless of how marriage rates were operationalized in these analyses, trends in marriage within the active military shifted abruptly as of FY2001. Prior to that year, rates of marriage, marriage upon accession, and entry into first marriage across all ranks, genders, and services of the active military had been steadily declining, with the exception of a temporary, and currently unexplained, increase in rates of entry into first marriage in FY1999. From FY2001 onward, the trend reverses, and rates of marriage—especially entries into first marriage—increased. Overall, the increases since FY2001 have been gradual. Because the years prior to FY2001 were characterized by declining rates of marriage, most of the increases in marriage after FY2001 represent a return to prior levels. Do these changes simply correspond to changes in marriage rates among the general population of the United States? No. On the contrary, rates of marriage in the United States, which declined in the years prior to FY2001, have continued to decline steadily since then, according to an update from the National Center for Health Statistics (Division of Vital Statistics, 2005).

How can we understand these trends? The stress hypothesis makes no predictions about entry into marriage, focusing exclusively on how the demands of military service affect couples that have already married. The *selection hypothesis,* in contrast, makes explicit predictions about rates of entry into marriage, and these predictions are consistent with the results described here. As described by the Nobel-winning

economist Gary Becker (1973), those considering marriage take into account the expected benefits of being married weighed against the expected benefits of remaining unmarried. For civilians, the expected benefits of marriage must be guessed; but within the military, those benefits, which include subsidized housing and health care, are explicit, substantial, and well-known to service members. This perspective predicts that service members, taking the military benefits associated with marriage into account, should marry at higher rates than comparable civilians and that these differences should be greatest for service members expecting to spend longer in the military—i.e., those for whom the relative benefits of being married over being unmarried will have the longest period over which to accrue. In a unpublished but nevertheless widely cited paper, the economists Zax and Flueck (2003) draw from data collected in 1980 to support these ideas, showing that service members do in fact marry at higher rates than comparable civilians do, and that the differences are greatest early in the service term and grow smaller the closer the service member is to discharge.

Thus, the selection hypothesis does explain higher rates of marriage within the military. But does it account for the abrupt shift in marriage trends since FY2001? One possibility consistent with this perspective is that the increased rate of deployment after FY2001 increased the relative benefits of being married versus being unmarried for service members. When a service member is deployed, the military provides financial support to spouses that is not offered to unmarried partners. For unmarried service members faced with an impending deployment, getting married is therefore a way to provide for a partner who would otherwise be left without support in the service member's absence. Indeed, unpublished data from the mid-1990s suggests that roughly half of unmarried soldiers are in a significant romantic relationship (Ender, 2005b). Rates and lengths of deployment have increased markedly since FY2001, and thus these unmarried service members face a new situation that has raised both the costs of remaining single and the benefits of marriage. Under these circumstances, more service members should be marrying. Moreover, rates of marriage should continue to increase as rates of deployment increase over time. Indeed, this is exactly the pattern evident in these data.

Other aspects of the data are also consistent with the selection hypothesis. For example, to the extent that changes in marriage rates reflect changes in the relative benefits of being married, we would expect that currently enlisted service members would be more sensitive to those changes than entering service members. In fact, the shift in marriage trends before and after FY2001 appears more pronounced in the analyses of transitions into first marriage among current service members than in the analyses of marriage rates among entering service members. Similarly, Zax and Fleuck (2003) predicted that considerations of the relative benefits of marriage should affect marriage rates most for those who expect longer service in the military. In fact, the shift in marriage trends before and after FY2001 appears more pronounced among officers, who may be more likely to serve beyond a single four-year term of service than among enlisted service members, who may be more likely to leave the service after four years. In contrast, this hypothesis makes no predictions regarding gender differences, and indeed, aside from the stable differences in rates of marriage between men and women, there were no obvious differences in how marriage rates for each gender changed before and after FY2001.

Although all the active services have experienced rising rates of marriage since FY2001, it is worth noting that the shape of the trajectory differs across the services. Within the Army and Marines, rates of entry into first marriage increased steadily since FY2001 through the most recent year of data. Within the Navy and Air Force, rates of marriage rose sharply in the first years since FY2001 but have since stabilized. To the extent that changing rates of marriage are associated with changes in rates of deployment, these differences may speak to differences in the demands on each service since the onset of military operations in Afghanistan and Iraq. Steady increases in rates of marriage are consistent with continuous increases in demands on the service as the current military actions continue. An increase in marriage followed by stability is more consistent with a categorical shift in demand, i.e., greater demands during periods of military action than periods of relative peace, but no changes in these demands over time.

Do the rising rates of military marriage since FY2001 mean that the ongoing military operations in Afghanistan and Iraq have some-

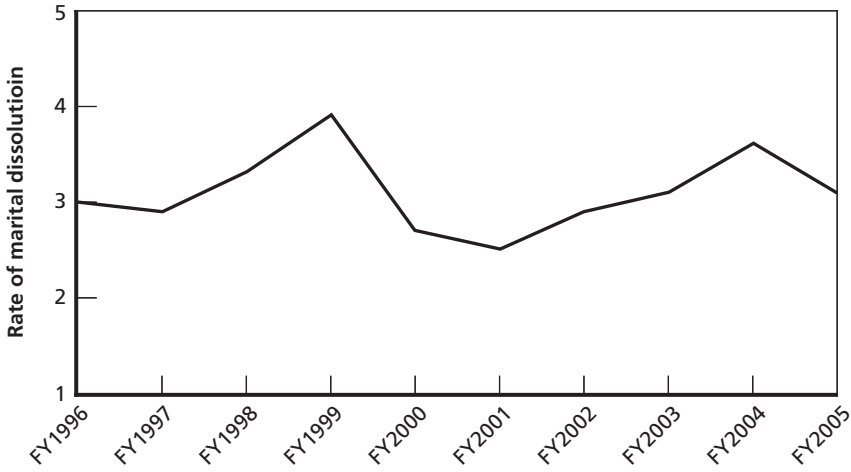
how been good for military families? Not necessarily. The selection hypothesis suggests that new demands on the military changed the expected benefits of entering marriage, but the hypothesis speaks not at all to the quality of those marriages once entered. If the desire to provide for a partner during deployment motivated some service members to choose marriage when they otherwise would have remained single, rising marriage rates may indicate increasing numbers of vulnerable, inappropriate, or hasty marriages. Such a process would result in trends in marital dissolution that run parallel to the trends in marriage described in this section. The analyses described in the next section address this possibility directly.

Patterns and Trends in Marital Dissolution Within the Active Component

Rates of Marital Dissolution

Within each fiscal year, rates of marital dissolution were estimated as the number of individuals who indicated a change of status from M ("married") to D ("divorced"), A ("annulled"), I ("interlocutory"), or L ("legally separated"), divided by the total number of married individuals at the start of the fiscal year. Those whose marriages ended due to the death of a spouse were not counted as dissolutions for these analyses. Figure 4.16 presents the results of this estimate across all the active services for each of the past ten years. What is striking about this figure is how closely its shape resembles the figures presented previously describing trends in rates of marriage (e.g., Figure 4.11). Just as rates of entering first marriage rose to a peak and then declined between 1999 and 2000, so did rates of marital dissolution. Just as rates of marriage have been increasing gradually since 2001, so have rates of marital dissolution. The net result of the increases and decreases over time is that rates of marital dissolution in the active component are now close to where they were a decade ago. In FY2005, 3.1 percent of the married service members in the active component dissolved their marriages.

Figure 4.16
Rates of Marital Dissolution Across All Active Services



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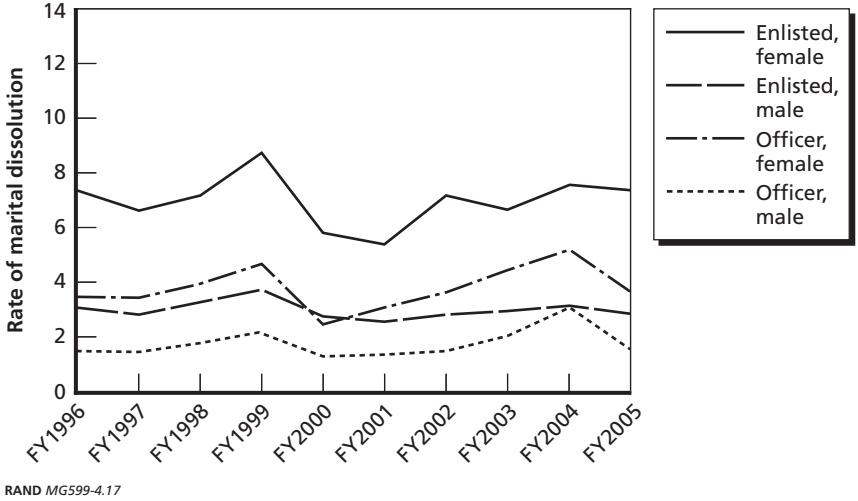
The overall trend for the active military masks considerable variability across the services, and across genders and ranks within each service. Two patterns in particular hold true across the active services. First, in every service, rates of marital dissolution are substantially higher for women than for men, and this difference is consistent across time. In FY2005, 6.6 percent of married women in the active military dissolved their marriages; the corresponding rate for active men was 2.6 percent. There were no comparable gender differences in rates of entering marriage. Second, active enlisted service members experience substantially higher rates of marital dissolution than active officers. In FY2005, 3.4 percent of married enlisted service members dissolved their marriages; the corresponding rate for active officers was 1.8 percent. Figure 4.17 describes trends in marital dissolution by gender and rank.

As Figure 4.17 reveals, enlisted men experienced the most stable rates of marital dissolution over the past five years. Enlisted women and officers of both genders experienced increasing rates of marital dissolution over that same period, although these rates were not, as of

Figure 4.17
Rates of Marital Dissolution by Gender and Rank Across All Active Services



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FY2005, as high as those reached in FY1999. Enlisted women, in particular, are far more likely to dissolve their marriages than are female officers or men of any rank, and this difference is stable over time. In FY2005, 7.3 percent of initially married enlisted women dissolved their marriages, compared with 2.8 percent of enlisted men, 3.6 percent of female officers, and 1.5 percent of male officers.

Figures 4.18 through 4.21 describe trends in marital dissolution for each of the services.

Press reports during the summer of 2005 based their concerns for rising divorce rates in the military on data from the active Army. These reports strongly suggested that rates of dissolution were rising sharply for enlisted men. As Figure 4.18 reveals, rates of marital dissolution did rise between FY2001 and FY2004, but the rise was sharpest for male and female officers, who in FY2004 dissolved their marriages at the highest rates of the past decade. However, subsequent data from FY2005 shows rates of marital dissolution for officers returning to slightly below the FY2003 rates, suggesting that the elevated rates in FY2004 were an anomaly and possibly the result of errors in the data

Figure 4.18
Rates of Marital Dissolution in the Active Army

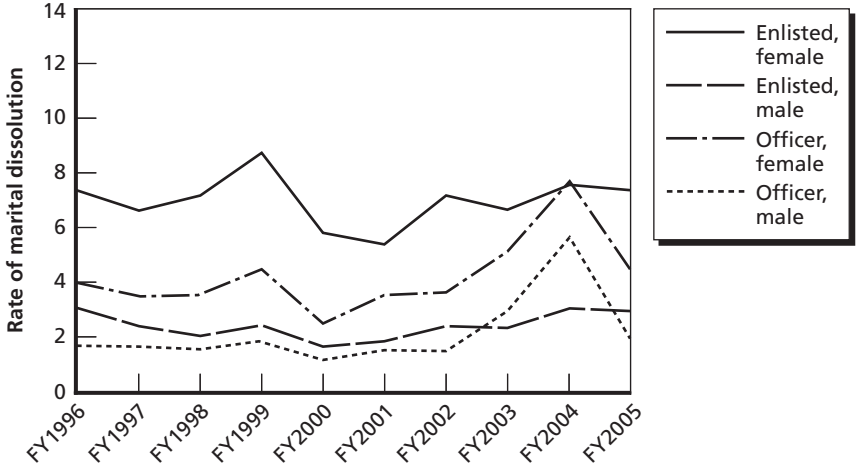

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Figure 4.19
Rates of Marital Dissolution in the Active Navy

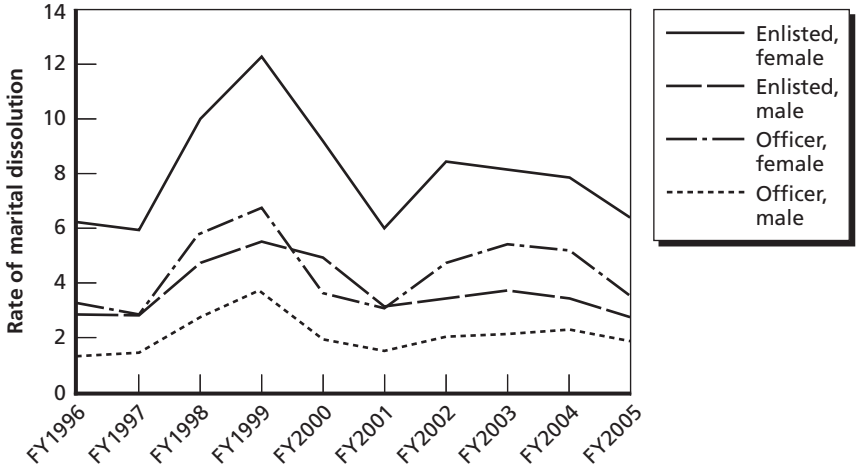

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Figure 4.20
Rates of Marital Dissolution in the Active Air Force

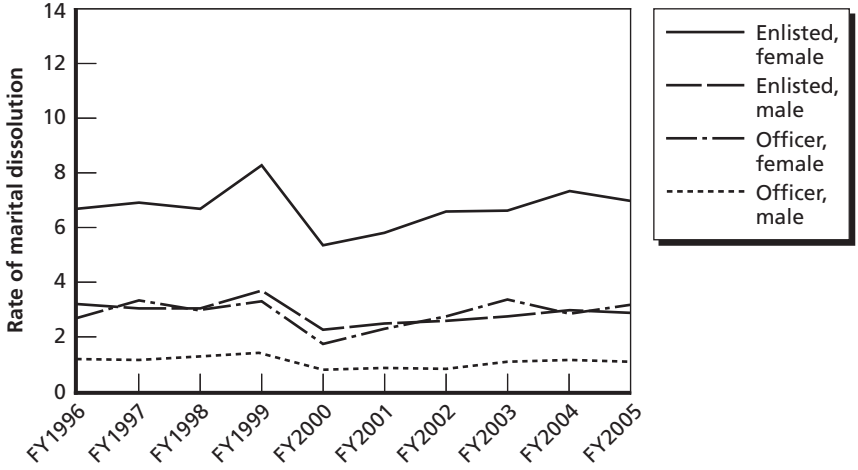

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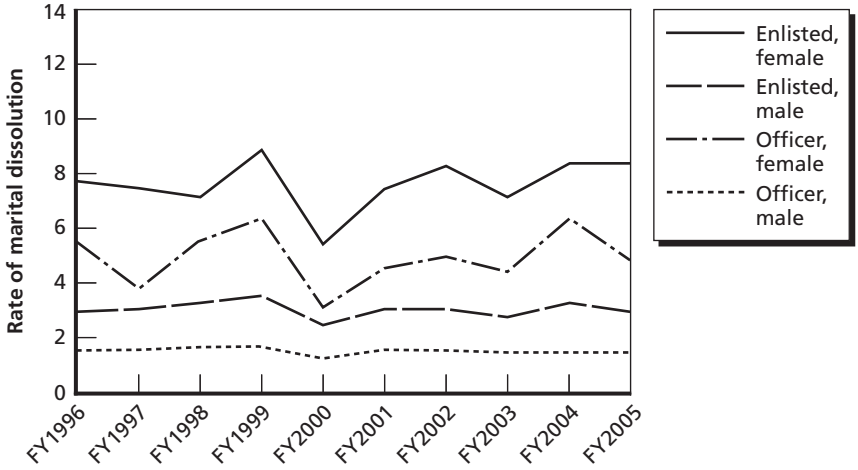
Figure 4.21
Rates of Marital Dissolution in the Active Marine Corps



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set (see Chapter Five for a more detailed discussion of this and other possible explanations for the FY2004 data).

The trends for enlisted service members are more consistent and less striking. For enlisted men in the active Army, rates of marital dissolution have been relatively stable, declining gradually but steadily between FY1996 and FY2000, and then increasing just as gradually from FY2000 to FY2005, so that dissolution rates in FY2005 were very near their 1996 levels. Enlisted women in the active Army experienced the same general trend, but their rates of marital dissolution declined more steeply before 2001 and have increased more rapidly since then. By FY2005, the picture of marital dissolution in the active Army looked very much as it looked in FY1996, such that, among those who were married at the beginning of FY2005, 8.2 percent of enlisted women, 4.4 percent of female officers, 2.9 percent of enlisted men, and 1.8 percent of male officers had dissolved their marriages.

Figure 4.19 reveals two noteworthy trends in rates of marital dissolution in the active Navy. First, rates of dissolution increased for all ranks and genders within the active Navy in the late 1990s. This increase peaked in FY1999, but rates did not return to the prior levels until FY2001. The observation of a peak in dissolution in FY1999 is consistent with trends in marriage and dissolution observed in all the other services. However, Figure 4.19 reveals elevated rates of dissolution in the active Navy that were larger and more enduring than the bumps observed during the same period in other services. Second, after an increase in marital dissolution in FY2002, the active Navy experienced rates of dissolution that have been stable or have declined slightly. By FY2005, the picture of marital dissolution in the active Navy looked very much as it looked in FY1996, such that, among those who were married at the beginning of FY2005, 6.3 percent of enlisted women, 3.4 percent of female officers, 2.7 percent of enlisted men, and 1.8 percent of male officers had dissolved their marriages.

As Figure 4.20 reveals, rates of marital dissolution in the active Air Force were relatively stable between FY1996 and FY1998. As we observed in the other services, rates of marital dissolution were relatively high in FY1999 and then declined sharply in FY2000. Since FY2000, rates of marital dissolution have increased gradually but steadily, such

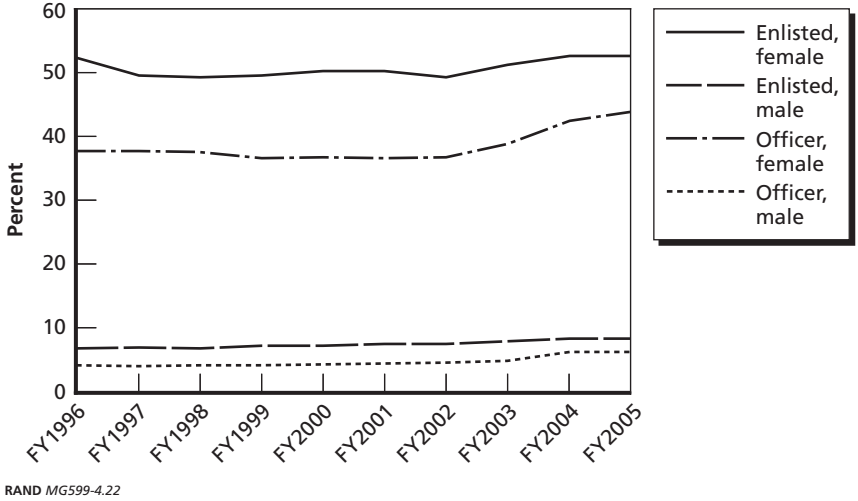
that by FY2005 they had returned to pre-1999 levels. By FY2005, the picture of marital dissolution in the active Air Force looked very much as it looked in FY1996, such that, among those who were married at the beginning of FY2005, 7.0 percent of enlisted women, 3.2 percent of female officers, 2.9 percent of enlisted men, and 1.1 percent of male officers dissolved their marriages.

Figure 4.21 reveals that rates of marital dissolution within the active Marine Corps have been generally stable for men over the past ten years. As we observed in the other services, rates of dissolution were slightly elevated in FY1999 and slightly lower in FY2000. In general, however, there is little evidence of trends for male Marines. Greater changes over time can be observed for women. Their trends resemble the trends among women in the active Army and Air Force: a peak in FY1999, a sharp decline in FY2000, and a gradual increase since then to FY1996 levels. By FY2005, the picture of marital dissolution in the active Marine Corps looked very much as it looked in FY1996, such that, among those who were married at the beginning of FY2005, 8.3 percent of enlisted women, 4.3 percent of female officers, 2.9 percent of enlisted men, and 1.5 percent of male officers had dissolved their marriages.

Dissolution in Dual-Military Marriages

The analyses reported thus far reveal gender to be more powerfully associated with the dissolution of military marriages than rank or service. Identifying the unique sources of vulnerability in the marriages of female enlisted service members is a crucial task for future research. In advance of that research, however, the data assembled for the current project offer an opportunity to examine one potential source of the gender difference in marital dissolution. As has been noted elsewhere (McCone and O'Donnell, 2006; Military Family Resource Center, 2003), female service members are far more likely than male service members to be in a dual-military marriage, i.e., a marriage in which both partners are serving in the military. Service personnel records keep track of dual-military marriages by asking married service members to indicate, via a single yes/no question, whether their partners are

Figure 4.22
Rates of Dual-Military Marriage Across the Active Services



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also serving in the military. Figure 4.22 presents rates of dual-military marriage by gender and services for each of the past ten years.

As the figure confirms, just as females are more likely to experience marital dissolution, so are they more likely to be married to another service member. In FY2005, for example, 52.3 percent of married enlisted females were in dual-military marriages, as were 43.6 percent of married female officers. In contrast, of the married males, just 8.2 percent of enlisted men and 6.1 percent of the officers were in dual-military marriages.

Could the high rates of dual-military marriage among female service members account for the elevated rates of marital dissolution experienced by females? To address this question, we compared rates of marital dissolution for service members who were married to civilians with the dissolution rates for service members who were married to other service members. Figure 4.23 presents this analysis for enlisted service members; Figure 4.24, for officers.

Figures 4.23 and 4.24 have several noteworthy aspects. First, the highest rates of dissolution are observed among women married to civilian spouses. The differences are particularly striking among the enlisted service members, but the generalization holds true among officers as well. Second, whereas women married to civilians experience higher rates of dissolution than do women in dual-military marriages, men married to civilians experience lower rates of martial dissolution than do men in dual-military marriages. In other words, the most-stable military marriage involves a military husband and a civilian wife, whereas the least-stable military marriage involves a military wife and a civilian husband, with dual-military marriages falling somewhere in between. A task for future research is to identify the unique challenges faced by the civilian husbands of military wives. Third, although it might have been expected that men and women in dual-military marriages would experience identical rates of dissolution (because they are presumably married to each other), in fact, women in dual-military

Figure 4.23
Rates of Marital Dissolution in Dual-Military Marriages and Marriages to Civilians, Active Enlisted

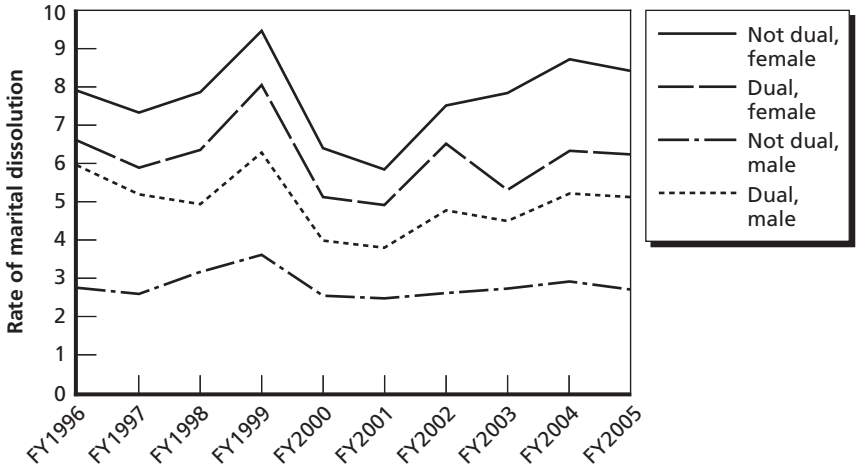

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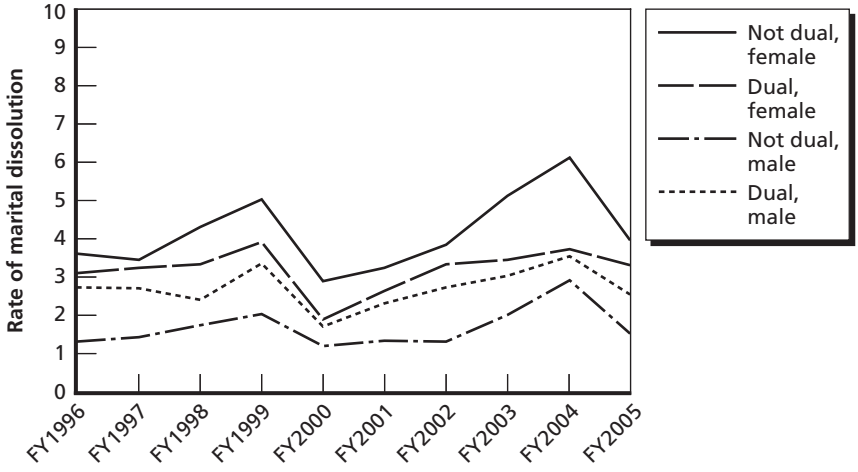
Figure 4.24
Rates of Marital Dissolution in Dual-Military Marriages and Marriages to Civilians, Active Officers



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marriages experience consistently higher rates of marital dissolution than men. One reason for the differing rates is that the men and women in these marriages may have been married to service members in other components of the military that do not appear in this analysis (for example, the National Guard or the reserves). Fourth, despite consistent differences in rates of dissolution among the different kinds of marriages, trends over time are similar in both groups.

Finally, differences in rates of dual-military marriage do not appear to account for the consistent gender differences in rates of marital dissolution within the military. Even within a single type of marriage, female service members are consistently at higher risk for dissolution than are male service members. In FY2005, among enlisted service members, marriages dissolved at a rate of 8.4 percent for women married to civilians, 6.2 percent for women in dual-military marriages, 5.1 percent for men in dual-military marriages, and 2.7 percent for men married to civilians. Among officers in FY2005, marriages dissolved at a rate of 3.9 percent for women married to civilians, 3.3 percent

for women in dual-military marriages, 2.5 percent for men in dual-military marriages, and 1.5 percent for men married to civilians.

Discussion: Marital Dissolution in the Active Component

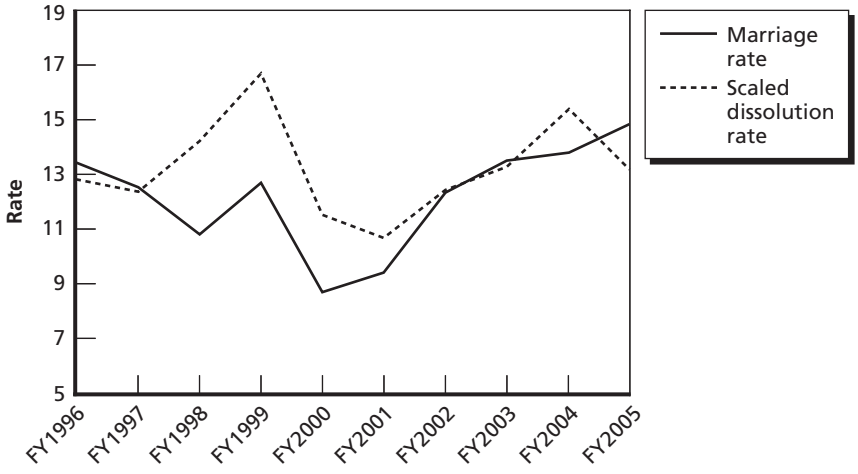
In the two years prior to FY2001, rates of marital dissolution in the active military changed abruptly. Throughout the services and across rank and gender, the change was the same: After peaking in FY1999, rates of dissolution fell sharply to a five-year low in FY2000. Since FY2001, change in rates of marital dissolution has been more gradual. In the Army, Air Force, and Marines, rates of marital dissolution have increased steadily since FY2001, returning by FY2005 to levels similar to those observed in FY1996. In the Navy, rates of marital dissolution increased sharply in the first years after FY2001 but declined in the last two years. As with the other services, however, the Navy's rates of dissolution in FY2005 resembled those of FY1996. These trends may be interpreted in several ways. Unquestionably, rates of marital dissolution have increased since the onset of military operations in Afghanistan and Iraq, lending support to those who view the breakup of military families as collateral damage from the current conflicts. Alternatively, given that rates of dissolution were especially low in FY2000, trends since then may be viewed as a gradual return to baseline. Consistent with the latter view is the fact that the terrorist attacks of September 11, 2001, occurred only at the end of FY2001, yet most of these analyses revealed changes in trends in marital dissolution that began during FY2001, i.e., prior to the onset of military actions in Afghanistan and Iraq.

To what extent do these results support the stress hypothesis that has been much discussed in the popular press? The stress hypothesis, derived from Hill's (1949) early research on military families, suggests that external demands on families (e.g., those posed by repeated and lengthy deployments) tax the ability of family members to maintain good relationships with each other. This perspective suggests that families exposed to stress should, on average, experience worse outcomes than families exposed to less stress. With respect to the past ten years, the stress hypothesis predicts that rates of marital dissolution should covary with the demands on the military.

Within these results, however, the evidence for such covariation is weak. For example, although the demands on service members and their families were demonstrably greater in FY2005 than they were in FY1996 (i.e., in terms of number and length of deployments, exposure to danger, separations from loved ones), divorce rates in those two years are remarkably similar. Among enlisted men in the active Army, Air Force, and Marines (i.e., the bulk of the active military and the group whose marriages have been the subject of most concern), the rise in rates of marital dissolution has been very gradual, despite the fact that the increase in demand on these services has been very great. Finally, the stress hypothesis does not account for the widespread drop in marital dissolution between FY1999 and FY2000.

In contrast, several aspects of these analyses provide support for the selection perspective on marital dissolution on the military. First and most striking is the close match between trends in rates of entry into marriage and trends in rates of marital dissolution over the past ten years. As described in Figure 4.25, both marriage and marital dissolution rates fell to low points in FY2000, and both have been climbing steadily since then.

Figure 4.25
Comparing Rates of Marriage and Marital Dissolution in the Active Military



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The stress hypothesis offers no reason to expect a close association between these rates, because it focuses exclusively on processes that take place after marriage. The selection hypothesis, in contrast, predicts exactly the association that is observed in these data. This perspective explains rising rates of marital dissolution as a direct function of the rising rates of marriage observed in the same period. When the threshold for marrying a current partner is lowered by changes in the relative benefits of being married, more vulnerable couples get married, leading to higher rates of subsequent marital dissolution. The analyses described here do not offer direct support for this explanation, but they are more consistent with the selection perspective than with the stress perspective.

Several limitations of these analyses prevent strong conclusions at this stage. First, the analyses described thus far have not included direct assessments of the demands faced by individual service members. A stronger test of the stress hypothesis would capitalize on the presence of multiple assessments of each service member and examine the direct effects of individual deployments on subsequent risk of marital dissolution. Those analyses are described in Chapter Six. Second, as noted earlier, reliance on service records means that members who leave the military before dissolving their marriages provide no records of their dissolution. Thus, the rates estimated here are likely to be underestimates of the true rates at which those married at the beginning of each fiscal year dissolve their marriages.

Aside from the trends in dissolution rates over time, the most striking aspect of these results is the observation that female service members experience substantially higher rates of marital dissolution than male service members. The media's descriptions of dissolution among military marriages focus exclusively on the marriages of male service members, but female service members seem to be disproportionately at risk. Explaining and addressing the higher vulnerability of female service members will require acknowledging the different social contexts in which male and female service members marry. The analyses of marital dissolution rates in dual-military marriages highlight some of the important features of this context. It is noteworthy, for example, that rates of marital dissolution are lowest in the marriages of

male service members and civilian wives, the pairing most consistent with cultural norms about gender roles. It is possible that, for these marriages, the prevailing culture provides an additional source of support for the marriage. This support may be intangible (e.g., approval and understanding from other members of society) or concrete (e.g., family support programs may assume that the spouses of service members are female). In contrast, rates of marital dissolution are highest for female service members married to civilians, the pairing that runs most counter to traditional gender roles. It may be that these marriages are in a relatively more vulnerable position because they lack the understanding and support provided to more familiar pairings. There also may be powerful selection effects that render female service members more accepting of divorce than male service members. The current analyses, far from ruling out any of these explanations, merely highlight the need for additional studies to understand and then to address the unique vulnerability of the marriages of female service members.

Patterns and Trends in Marriage and Marital Dissolution Within the Coast Guard

For several reasons, the Coast Guard is unique among the armed services. First, whereas the other four armed services separate their active and reserve components, the Coast Guard combines active, reserve, civilian, and auxiliary members. To the extent that patterns of marriage and marital dissolution differ by component, we would expect patterns within the Coast Guard to blend the patterns observed in other analyses reported here. Second, the mission of the Coast Guard is broader than that of the other armed services, including not only national defense but also maritime safety, protection of natural resources, mobility, and maritime security. Since the onset of the current military operations, units of the Coast Guard have been deployed to Iraq, so members of the Coast Guard may be expected to have experienced greater demands than usual, comparable to the demands faced by the other services.

Percentage Currently Married

As Figure 4.26 reveals, the percentage of married service members in the Coast Guard has been stable over the past ten years for male officers but has generally been declining for enlisted men and for all women. Specifically, the proportion of these latter groups that is married declined gradually between FY1996 and FY2003, and has risen slightly in the two subsequent years. In FY2005, 40.6 percent of enlisted women, 46.9 percent of female officers, 54.3 percent of enlisted men, and 79.3 percent of male officers were married in the Coast Guard.

Marital Status upon Accession

Figure 4.27 presents data on rates of marriage upon accession within the Coast Guard. The results for male and female officers are based on very low numbers and so should be considered unreliable. The results for male and female enlisted service members are more trustworthy, They indicate that rates of marriage upon accession, after declining gradually between FY1996 and FY2001, have been increasing since

Figure 4.26
Percentage Married in the Coast Guard

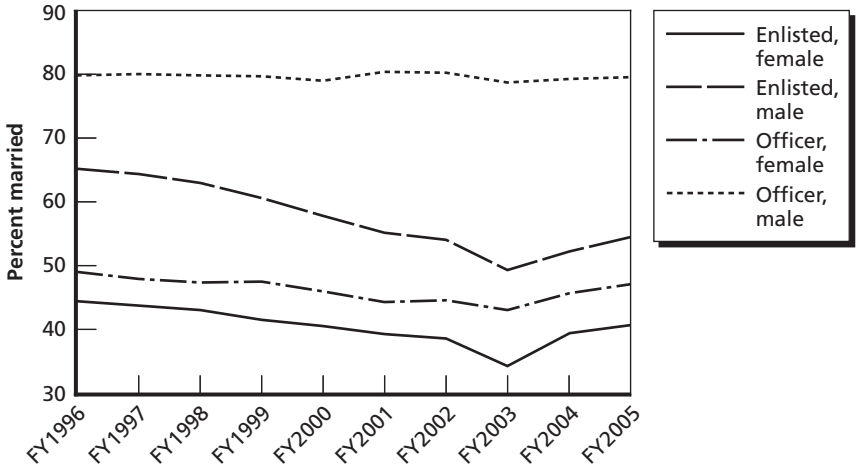

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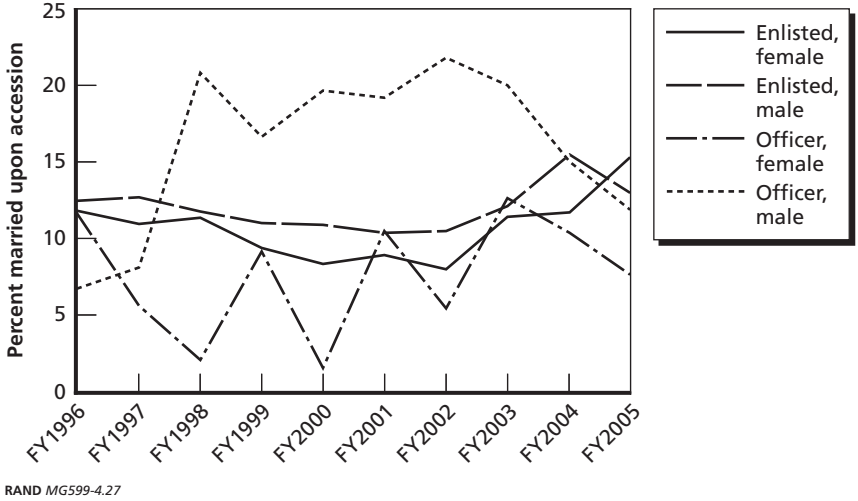
Figure 4.27
Percentage Married upon Accession in the Coast Guard



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then, and by FY2005 were higher than at any point in the last ten years. In FY2005, 15.2 percent of entering enlisted women and 12.9 percent of entering enlisted men were married.

Rates of First Marriage While in the Service

It is hard to be confident in the analyses of trends in entering first marriages in the Coast Guard, for two reasons. First, the raw numbers of individuals making this transition within the Coast Guard are far too low in most years for reliable and stable estimates. Second, the results for FY2002 are unusually low and may be suspect. With those caveats in mind, the general trend in entry into marriage within the Coast Guard is a familiar one, as revealed by Figure 4.29. Overall, rates of entry into marriage declined from FY1996 to FY2000. Since then, with the exception of the anomalous results in FY2002, rates of entry into first marriage appear to have increased until FY2003, whereupon they have declined slightly. By FY2005, rates of entry into first marriage were close to where they had been in FY1996, with 12.2 percent of enlisted women, 10.9 percent of female officers, 11.2 percent of

enlisted men, and 12.2 percent of male officers making the transition from never married to married.

Marital Dissolution

As with the percentage entering first marriage in the Coast Guard (Figure 4.28), rates of marital dissolution in the Coast Guard are estimated from very few raw numbers, which accounts for the instability of the estimates from year to year. Also consistent with Figure 4.28, the rates estimated for FY2002 are suspiciously low, suggesting that there may be problems with the data from that year. Ignoring that year, Figure 4.29 suggests that trends in rates of marital dissolution in the Coast Guard have mirrored trends in rates of entry into first marriage, such that rates of dissolution declined between FY1999 and FY2000 and then increased to FY2003, whereupon they stabilized or declined slightly. This is also similar to the pattern evident in the data from the active Navy (see Figures 4.13 and 4.19). For men, the end result is rates of marital dissolution in FY2005 that closely resemble those of tenyears previously. For women, rates of marital dissolution in FY2005 were higher than ten years previously for enlisted personnel but lower than ten years previously for officers. In FY2005, among those who were initially married, 7.7 percent of enlisted women, 2.7 percent of enlisted men, 1.7 percent of female officers, and 1.2 percent of male officers dissolved their marriages.

Figure 4.28
Percentage Entering First Marriage in the Coast Guard

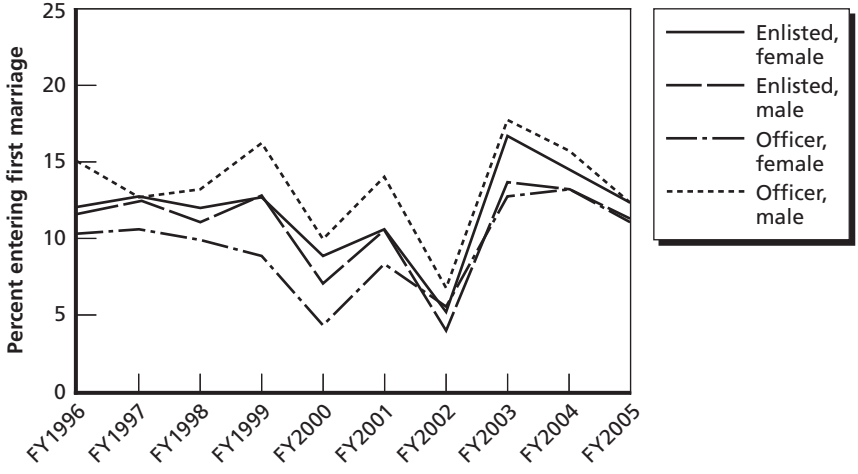

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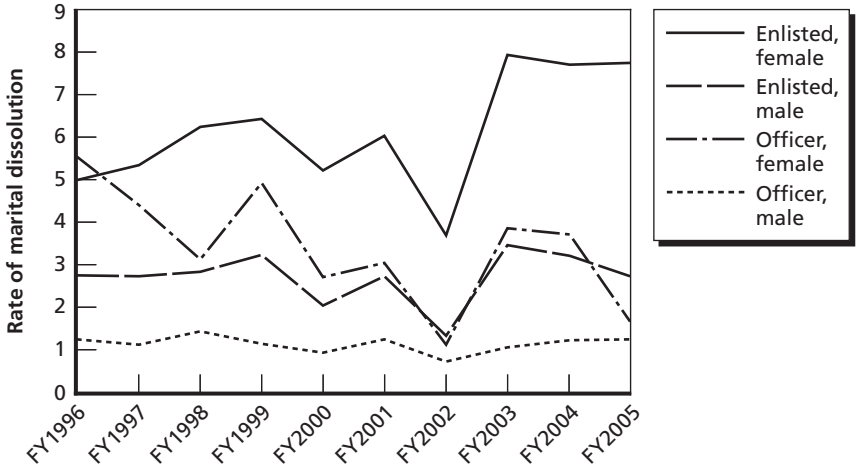
Figure 4.29
Rates of Marital Dissolution in the Coast Guard



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Discussion

All considerations of patterns and trends in marriage and marital dissolution within the Coast Guard must account for the unreliability of these data, especially the data on entering and dissolving marriage from 2002. Taking these issues into account, the general trends and patterns revealed in the data from the Coast Guard resemble those of the other active services, the Navy in particular. As in the other active services, rates of marriage and marital dissolution in the Coast Guard declined from FY1999 to FY2000. As in the Navy, rates of marriage and marital dissolution in the Coast Guard increased from FY2000 through FY2003 (ignoring the suspect data from FY2002) and have since stabilized or declined. The similarities in the results for the Coast Guard and the other services suggest that similar forces are affecting trends in marriage and marital dissolution in all the active services.

Patterns and Trends in Marriage and Marital Dissolution Within the Reserve Component

As many have noted, the reserve component of the U.S. military has been hit particularly hard by the demands of current actions in Afghanistan and Iraq. Back in 2000, Pryce and colleagues wrote, "Current national policy relies heavily on the Reserve components, requiring frequent activation and subsequent deployments of National Guard and Reserve organizations and individual service members in support of national policy around the world" and concluded that "Currently, the reserve components are undergoing far more calls to active and subsequent deployments than at any time since World War II" (Pryce, Olgivie-Lee, and Pryce, 2000, pp. 26–27). Since the onset of military operations in Afghanistan and Iraq, the demands on the reserve component have only increased. Not only have reservists been deployed more often in these conflicts than in the past, but they have been deployed for longer intervals as well.

There are good reasons to suggest that reservists may be less well prepared than members of the active component to meet the recent demands on the military. For the active component, deployment is

an expected fact of life. Active service members and their families are therefore likely to be prepared for deployments when they come. To the extent that active members live on or near bases, they are connected to various military family support programs designed to ease the burden. Reservists have none of these advantages. As Pryce and colleagues wrote, "Reservists, in contrast to active-personnel, reside primarily in communities where military installation support and networks of military peers and families are not found. Consequently, a military-focused network of social support for managing the demands and difficulties on service members and their families, as called for by the National Guard Family Program, may not be in place" (Pryce, Olgivie-Lee, and Pryce, 2000, p. 30). Moreover, reservists are likely to be employed in jobs that are threatened by deployments, in contrast to active members who are less likely to have other jobs. For all these reasons, it may be expected that whatever effects that military service has had on the recent marital outcomes of the active component of the military may be magnified in the reserve component. That is, reservists may be more sensitive to changes in the potential benefits of marriage, and their marriages may be more affected by the stresses of military service and deployment.

As far as we are aware, this monograph contains the first analyses of trends and patterns in marriage and marital dissolution in the reserve component of the military. Because there has been little prior demand for marital status data from the reserve component, errors and sloppiness in the way marital status has been recorded may have gone undetected. In the analyses that follow, several aspects of the data point to such problems, and these aspects are highlighted.

Percentage Married

Compared with the active component, in which the proportion of married service members has declined during the past ten years (see Figure 4.1), Figure 4.30 reveals that the married proportion of the reserve component has remained relatively stable. In FY2005, 50.9 percent of reservists were married, compared with 52.9 percent of the active component.

As is true in the active component, marriage rates among reservists vary substantially by rank, gender, and service. Figures 4.31 through 4.34 describe these differences for each of the reserve services. Of note is the consistent finding that officers are more likely to be married than enlisted service members, and men are more likely to be married than women. The Marine Corps Reserve is the only service within which the percentage of enlisted men who are married is lower than the percentage of women. In FY2005, across all services of the reserve component, 35.9 percent of enlisted women, 48.1 percent of enlisted men, 58.4 percent of female officers, and 78.0 percent of male officers were married.

Figure 4.30
Percentage Married Across All Reserve Component Services

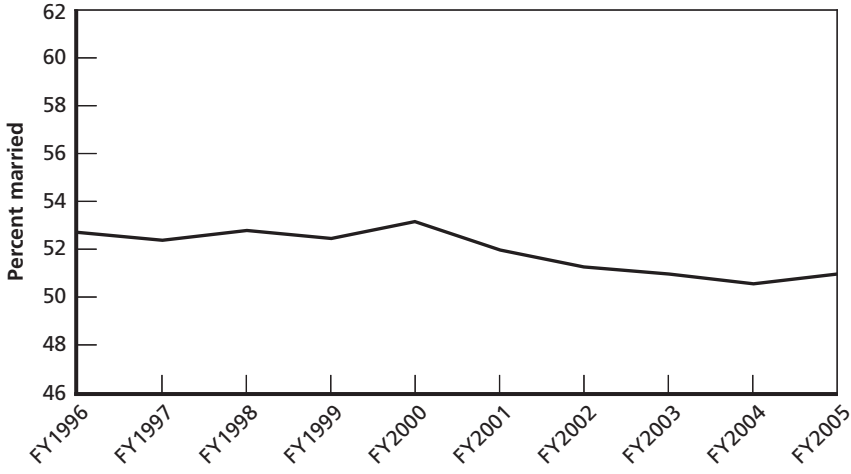

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Figure 4.31
Percentage Married in the Army Reserve

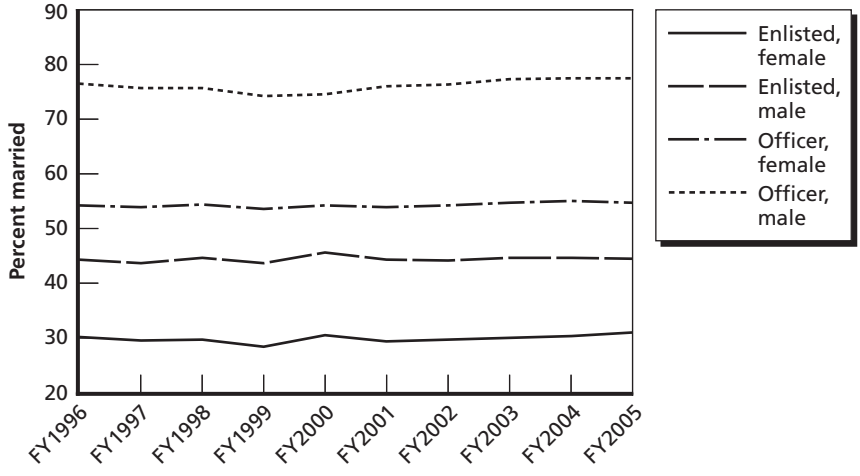

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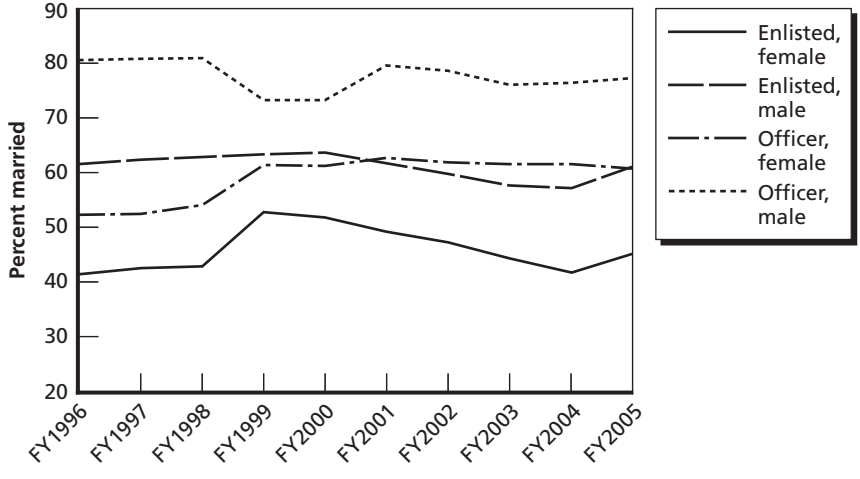
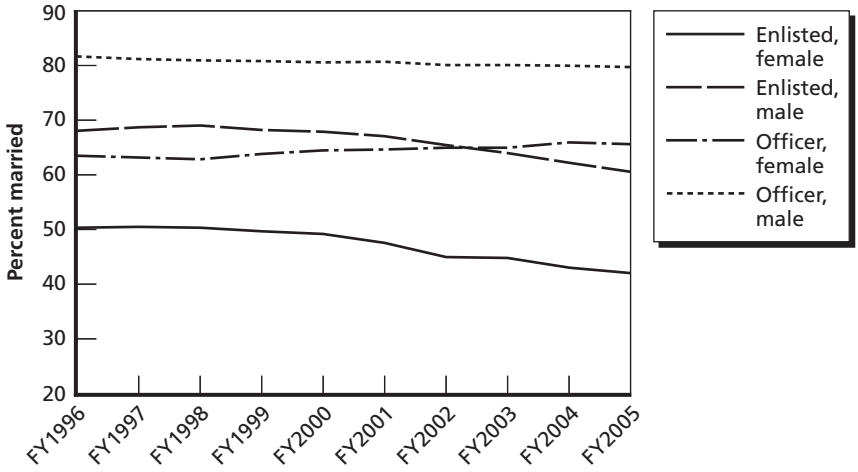
Figure 4.32
Percentage Married in the Navy Reserve



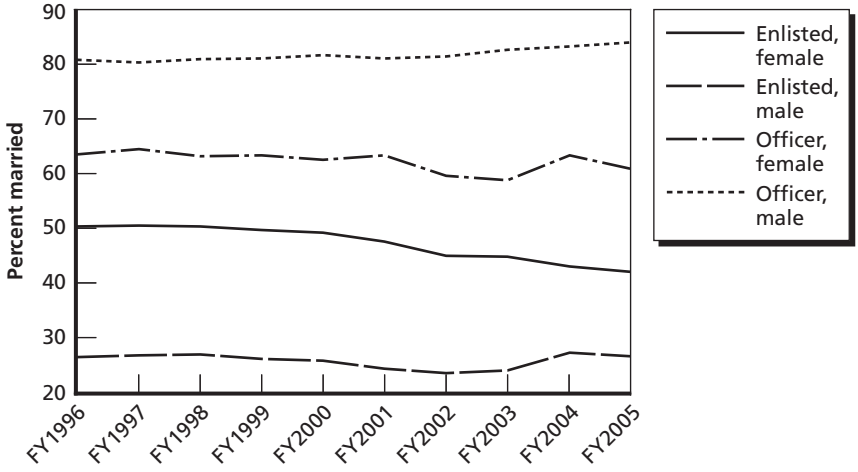
RAND *MG599-4.32*

Figure 4.33
Percentage Married in the Air Force Reserve



RAND *MG599-4.33*

Figure 4.34
Percentage Married in the Marine Corps Reserve

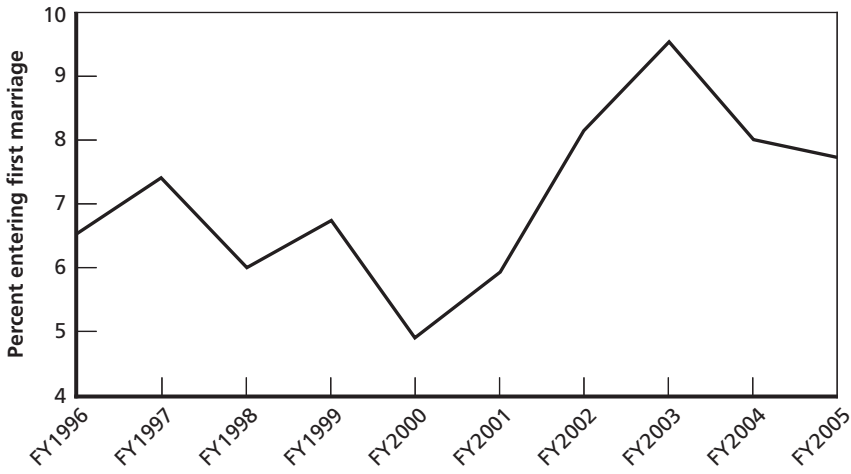


RAND *MG599-4.34*

Rates of First Marriage While in the Service

For the active services, we assessed changes in the perceived benefits of marriage in two ways: through rates of marriage upon accession and rates of entry unto first marriage while in the service. For the reserve component, however, rates of marriage upon accession were not available, so we assessed changes in marriage solely through rates of entry into first marriage. Trends in those rates for the entire reserve component are presented in Figure 4.35. That figure reveals that, compared with never-married service members in the active component (see Figure 4.11), never-married reservists on average enter into marriage at slightly lower rates. In FY2005, for example, 7.7 percent of never-married reservists entered their first marriages, compared with 14.4 percent in the active component. Yet, although the rates of transition to first marriage are slightly lower in the reserve than in the active component, trends in this rate over time follow a remarkably similar pattern. As in the active component, rates of transition to first marriage generally fell between FY1999 and FY2000 and then increased sharply through

Figure 4.35
Percentage Entering First Marriage in the Reserve Component



RAND *MG599-4.35*

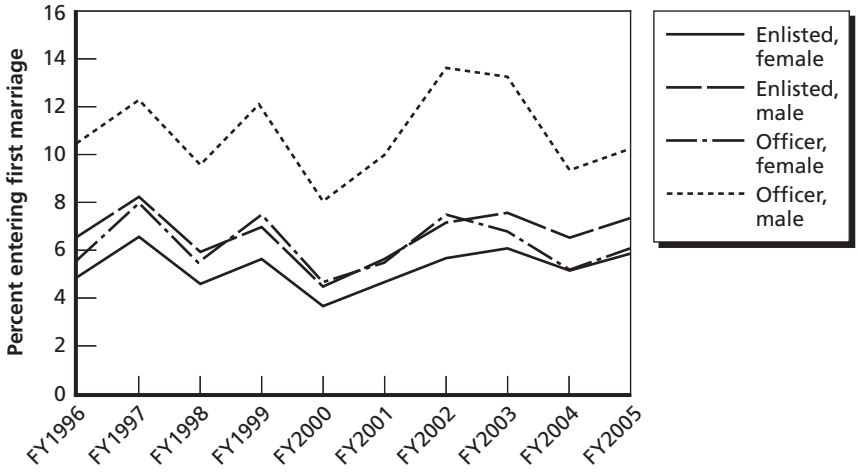
FY2003. Whereas rates continued to increase in the active component, rates among reservists have since declined somewhat but are still higher than they were at any point in the five years prior to FY2001.

In the active component, all services saw a sharp decline in rates of transition to first marriage between FY1999 and FY2000. As revealed in Figures 4.36 through 4.39, the same trend is evident in each of the reserve services.

Across the past ten years, rates of transition to first marriage are higher for male officers than for other segments of the Army Reserve. However, as Figure 4.36 reveals, trends in transitions to first marriage are similar across ranks and genders. Within the Army Reserve, rates of entry into first marriage reached a low point in FY1999, after which they have generally been rising over the past five years. As a result, rates in FY2005 closely resemble rates in FY1996. Overall, these trends are similar to the trends observed in the active Army (see Figure 4.12).

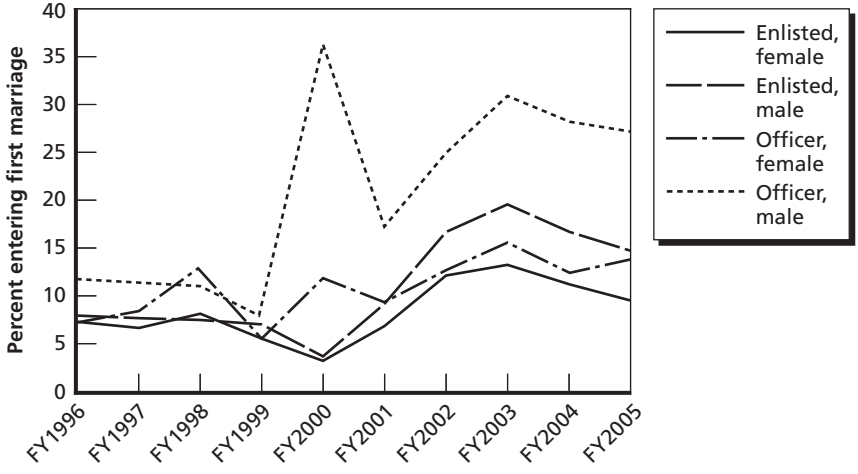
Among Army reservists that had never been married at the start of FY2005, 5.8 percent of enlisted women, 6.0 percent of female offi-

Figure 4.36
Percentage Entering First Marriage in the Army Reserve



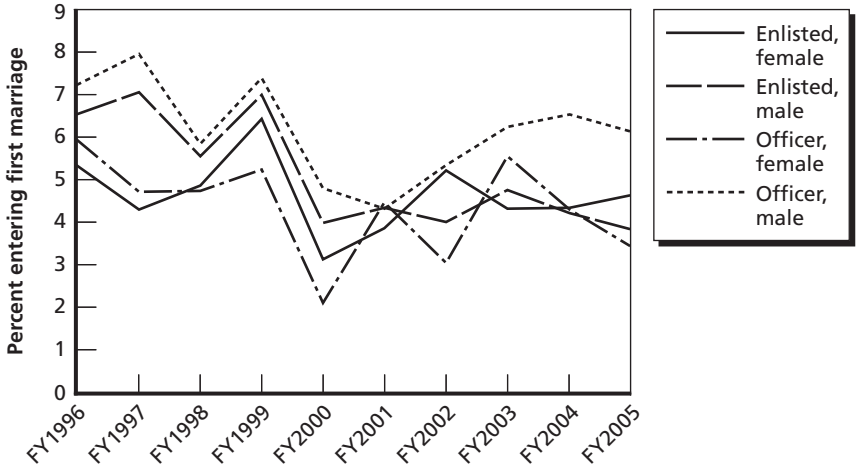
RAND *MG599-4.36*

Figure 4.37
Percentage Entering First Marriage in the Navy Reserve



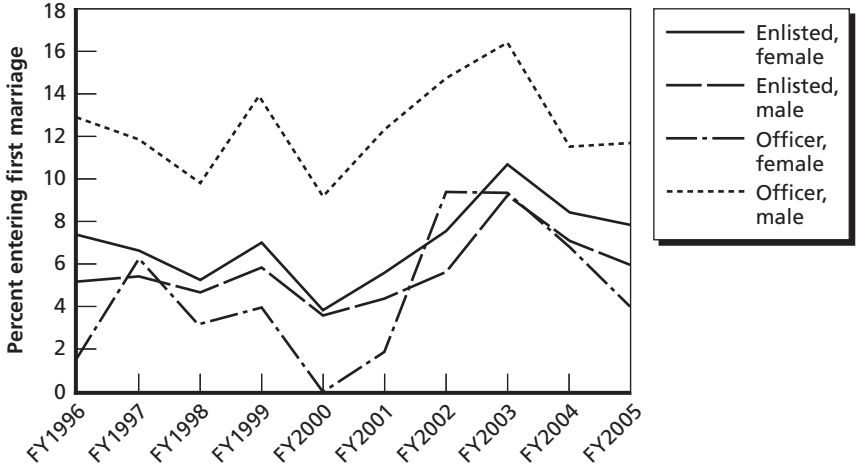
RAND *MG599-4.37*

Figure 4.38
Percentage Entering First Marriage in the Air Force Reserve



RAND *MG599-4.38*

Figure 4.39
Percentage Entering First Marriage in the Marine Corps Reserve



RAND *MG599-4.39*

cers, 7.3 percent of enlisted men, and 10.2 percent of male officers had entered their first marriages by the end of the year.

DMDC is aware of specific problems with the data on marital status within the Navy Reserve (see Chapter Five), and Figure 4.37 reveals some of them. In particular, the rates of transition to first marriage among male officers in FY2000 cannot be trusted. Ignoring that data point, trends in transitions to first marriage within the Navy Reserve closely resemble the trends in the active component. That is, after declining from FY1996 to FY2000, rates of transition to first marriage increased sharply for all ranks and genders of the Navy Reserve through FY2003 and have declined slightly in the two years since then. In FY2005, unmarried service members in the Navy Reserve were married at rates of 27.0 percent for male officers, 14.7 percent for enlisted men, 13.8 percent for female officers, and 9.4 percent for enlisted women.

Estimates of transition to first marriage for female officers in the Air Force Reserve are based on very low numbers (fewer than 60 per year), accounting for the instability of these estimates over time. Yet, although rates of entry into first marriage are generally lower in the

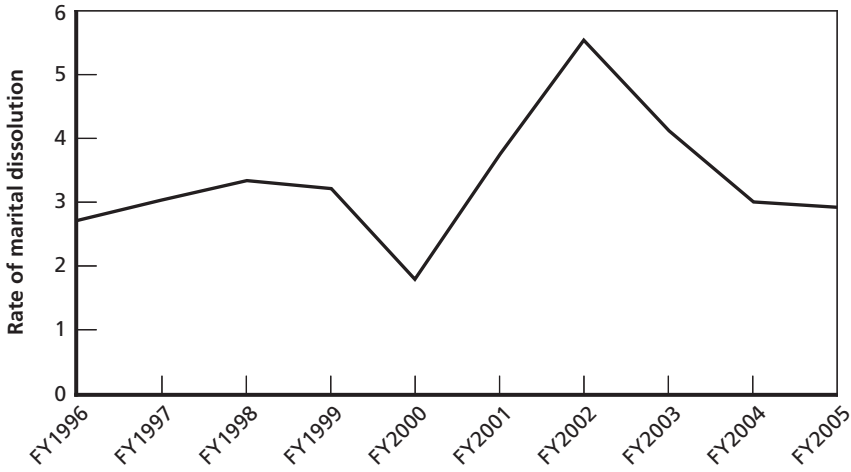
Air Force Reserve than in the active Air Force, Figure 4.38 reveals that the general trend for the Air Force Reserve resembles the trend in the active Air Force (see Figure 4.14). Between FY1996 and FY2000, rates of transition to first marriage generally declined. From FY2000 to FY2005, rates have generally increased, except for enlisted men, for whom rates have remained stable. Across the past ten years, rates of transition to first marriage in the Air Force Reserve have declined overall for both ranks and genders. In FY2005, unmarried service members in the Air Force Reserve were married at rates of 6.1 percent for male officers, 3.8 percent for enlisted men, 3.4 percent for female officers, and 4.6 percent for enlisted women.

Rates of transition to first marriage in the Marine Corps Reserve are based on very low raw numbers for enlisted women (fewer than 100 per year), female officers (fewer than ten per year), and male officers (fewer than 100 per year). Thus, all generalizations about these segments should be approached with caution. Nevertheless, despite some greater fluctuations and lower rates of marriage overall, Figure 4.39 reveals that trends in entry into marriage in the Marine Corps Reserve resemble the trends observed in the active Marine Corps (see Figure 4.15). Within the most reliable segment of the data described in this figure (enlisted men), rates of entry into first marriage declined gradually from FY1996 to reach a ten-year low in FY2000, then increased sharply through FY2003, after which they have declined again. By FY2005, rates of enlisted men, enlisted women, and female officers are slightly higher than they were in FY1996. In FY2005, unmarried service members in the Marine Corps Reserve were married at rates of 11.6 percent for male officers, 5.9 percent for enlisted men, 3.9 percent for female officers, and 7.8 percent for enlisted women.

Rates of Marital Dissolution

Figure 4.40 presents the rate at which married members of the reserve dissolved their marriages in each of the past ten years. The estimates reported in this figure must be considered with caution, given that they include data from the Navy Reserve that, as will be described in detail below, are highly suspect. With that caution in mind, the trends described in this figure are nevertheless striking for two reasons.

Figure 4.40
Rate of Marital Dissolution Across All Services of the Reserve Component

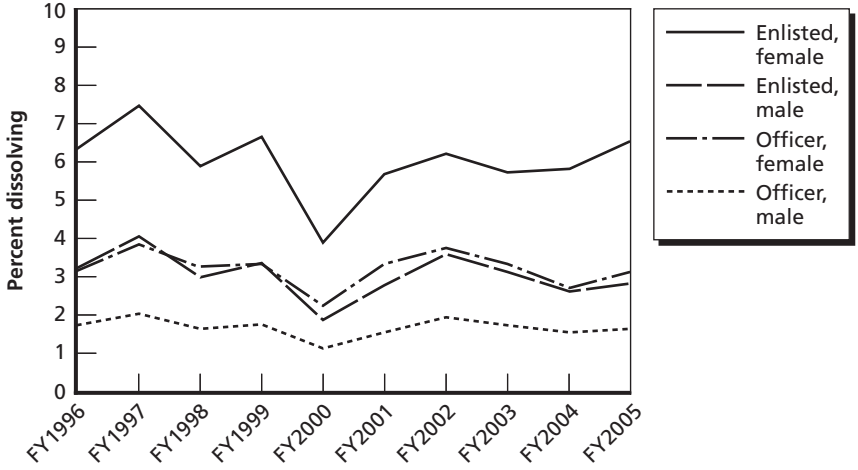


RAND *MG599-4.40*

First, across the services of the reserve component, trends in marital dissolution resemble the trends in the active component (see Figure 4.16), i.e., after a sharp decline in marital dissolution between FY1999 and FY2000, rates of marital dissolution have increased and gradually returned to FY1996 levels. Second, within the reserve component, trends in marital dissolution closely mirror trends in rates of entry into first marriage (see Figure 4.35). That is, both marriage and divorce in the reserve component reached low points in FY2000, increased rapidly through FY2002 and FY2003, and leveled off in the last two years. In FY2005, 2.9 percent of reservists who were married at the beginning of the fiscal year had dissolved their marriages by the end of it.

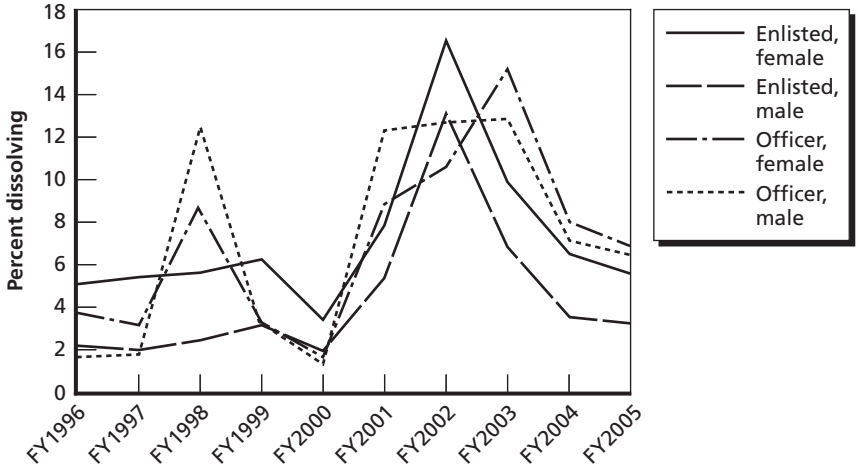
Comparing across services, ranks, and gender, some generalizations that describe marital dissolution in the active component also hold true for the reserve component. As Figures 4.41 through 4.44 reveal, women dissolve their marriages at consistently higher rates than men, and enlisted service members at consistently higher rates than officers. In FY2005, 5.6 percent of initially married enlisted women dissolved their marriages, compared with 2.5 percent of enlisted men, 3.3 percent of female officers, and 2.6 percent of male officers.

Figure 4.41
Rates of Marital Dissolution in the Army Reserve



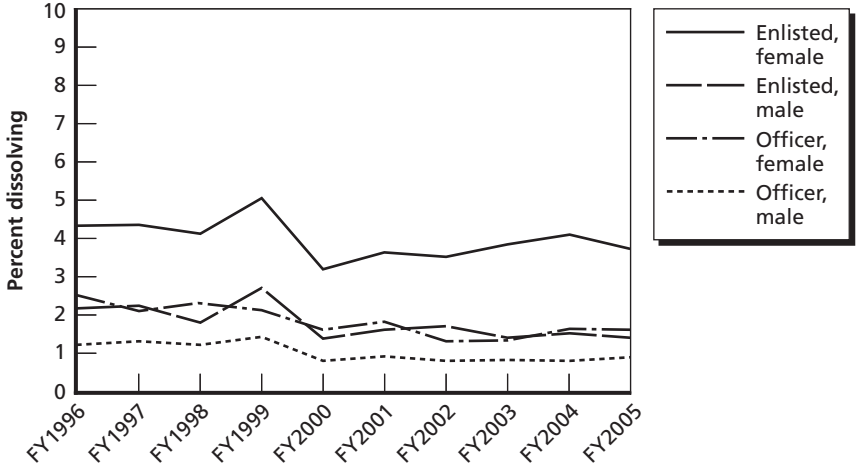
RAND *MG599-4.41*

Figure 4.42
Rates of Marital Dissolution in the Navy Reserve



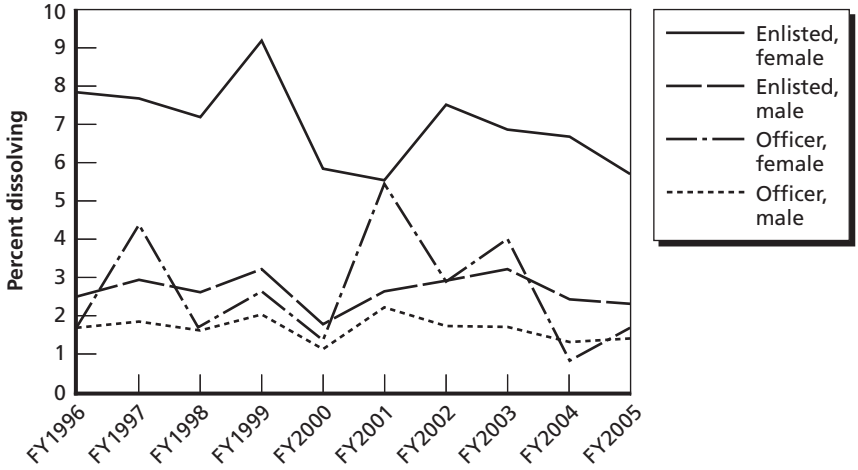
RAND *MG599-4.42*

Figure 4.43
Rates of Marital Dissolution in the Air Force Reserve



RAND *MG599-4.43*

Figure 4.44
Rates of Marital Dissolution in the Marine Corps Reserve



RAND *MG599-4.44*

Have the marriages of Army reservists been more strongly affected by military actions in Afghanistan and Iraq than members of the active Army? It does not appear so from these data. Comparing Figure 4.41 with Figure 4.18 suggests that trends in marital dissolution in the Army Reserve have been similar to those in the active Army. In both components, rates of dissolution declined to a low in FY2000 and have gradually increased since then, so that rates in FY2005 were very close to what they were in FY1996, and very close to the rates for the active Army in the same year. Among Army Reservists who were married at the beginning of FY2005, 6.5 percent of enlisted women, 3.1 percent of female officers, 2.8 percent of enlisted men, and 1.6 percent of male officers dissolved their marriages.

As mentioned previously, DMDC has acknowledged problems in the marital status data from the Navy Reserve. As revealed by Figure 4.42, FY2002 appears problematic for both ranks and genders, and FY1998 appears problematic for male and female officers. Because so much of these data are suspect, we have refrained from making even tentative generalizations about trends in marital dissolution among the Navy Reserve.

A comparison of Figures 4.43 and 4.20 indicates that the rates of marital dissolution are slightly lower in the Air Force Reserve than in the active Air Force and have been generally stable over time in both components. Aside from the elevated rates in FY1999 and low rates in FY2000 that are evident throughout these analyses, the Air Force does not appear to experience much change in rates of marital dissolution. In the reserve component, rates in FY2005 represent a slight decline from FY1996. Among Air Force reservists who were married at the beginning of FY2005, 3.7 percent of enlisted women, 1.6 percent of female officers, 1.4 percent of enlisted men, and 0.9 percent of male officers had dissolved their marriages.

As has been seen before in these analyses, estimates of marital dissolution rates for women in the Marine Corps Reserve appear unstable in Figure 4.44 because they are based on very low raw numbers of individuals. Taking the low numbers into account, marital dissolution appears to have generally declined for women of both ranks over the past ten years. The estimated rates for men are more reliable and paint

a picture similar to that described in Figure 4.21. For male Marines in both the reserve and the active components, rates of marital dissolution have been generally stable, with the exception of a temporary decline observed in FY1999. For the Marine Corps Reserve in FY2005, 6.2 percent of enlisted women, 1.7 percent of female officers, 2.3 percent of enlisted men, and 1.4 percent of male officers dissolved their marriages.

Discussion: Marriage and Marital Dissolution in the Reserve Component

Despite good reasons to expect that the forces affecting marriage and marital dissolution within the reserve component are different from those affecting the active component of the military, there is little evidence for such differences within these data. Overall, rates of entering marriage are as much as 50 percent lower within the reserve component than within the active component. This is to be expected because reservists are typically older than active members and so are more likely to be married already. Among married service members, rates of dissolution are similar within the reserve and active components, and both components appear to be experiencing similar trends over time. The similarities in the results for different components of the military lend additional support to the perspective that emphasizes structural factors over stress as determinants of family transition within the military. If stress were a significant factor in marriage and marital dissolution, it would be expected that since the onset of military operations in Afghanistan and Iraq, rates of marital dissolution should be rising faster within the reserve than in the active component, seeing that the lives of reservists should be more greatly disrupted by deployments than the lives of active members. The failure to find the expected differences suggests that the most influential forces that affect marriage and dissolution in the military are those that affect active and reserve components equally, e.g., the structure of the benefits and compensation allocated to married and unmarried service members.

An examination of the reserve data also reveals some inadequacies in the way that marital status has been recorded for the reserve services. Perhaps because there has been little demand for these data in the past,

marital status data for the reserves appears to have been poorly collected and maintained, especially in the Navy. As an increasing level of attention and resources is devoted to supporting the families of reservists, it will be increasingly important that data on marital status within this component be maintained accurately, so that the effects of new programs and policies can be assessed.

Patterns and Trends in Marriage and Marital Dissolution Within the National Guard

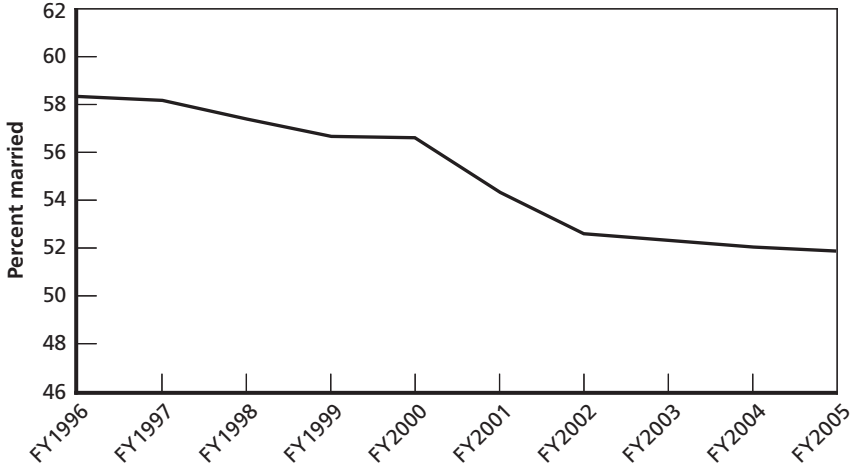
Although a primary mission of the National Guard is to support homeland security, a substantial portion of the Army National Guard has been deployed during the military operations in Afghanistan and Iraq, both to support the actions in these countries and to bolster forces in other countries where active troops have been redeployed to Iraq. Thus, like the other components of the armed forces, members of the National Guard have experienced relatively greater demands since the onset of military operations in Afghanistan and Iraq, and these demands might be expected to have taken a toll on the marriages of service members in these services.

Percentage Married

Figure 4.45 describes trends in the married proportion of the National Guard over the past decade. Comparing these trends to trends in the reserve (Figure 4.30) and active component (Figure 4.1) suggests that marriage patterns in the National Guard resemble those in the active component more than the reserve component. As is true in the active component, the proportion of married service members in the National Guard has declined gradually and steadily over the past decade, from 58.3 percent in FY1996 to 51.8 percent in FY2005.

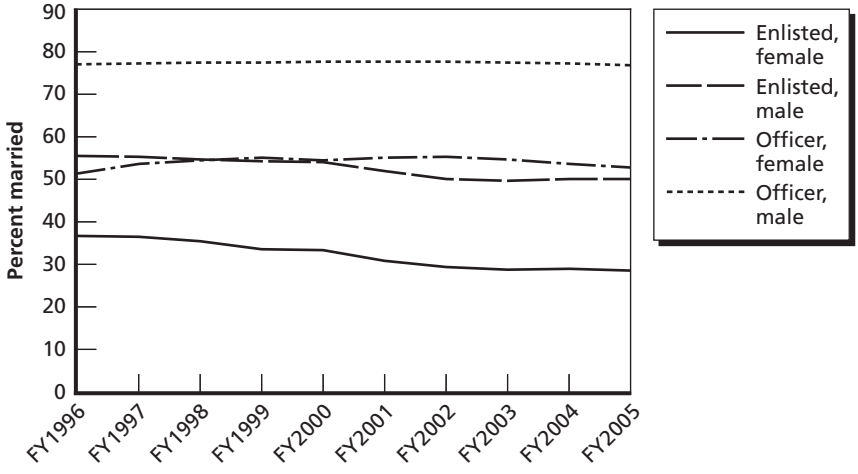
As we have seen throughout these analyses, trend estimates for the entire National Guard mask variability across rank, gender, and service. Figures 4.46 and 4.47 describe these differences for the Army National Guard and the Air National Guard, respectively. In both services, men are more likely to be married than women, and officers are

Figure 4.45
Percentage Married Across All National Guard Services



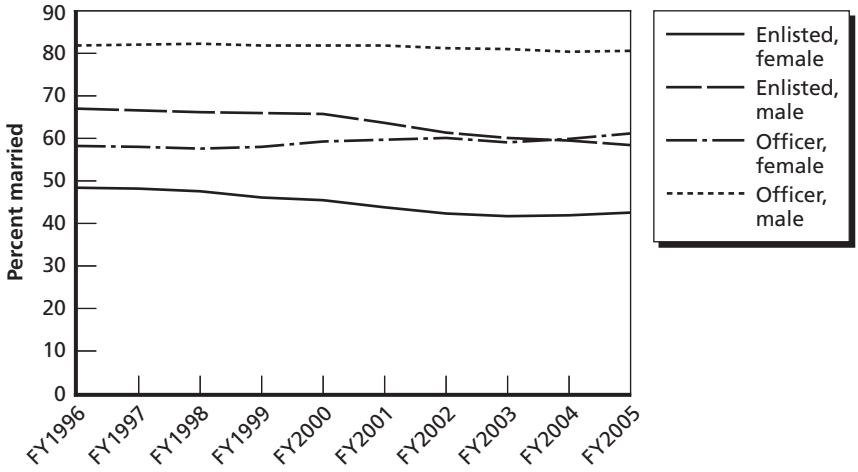
RAND *MG599-4.45*

Figure 4.46
Percentage Married in the Army National Guard



RAND *MG599-4.46*

Figure 4.47
Percentage Married in the Air National Guard



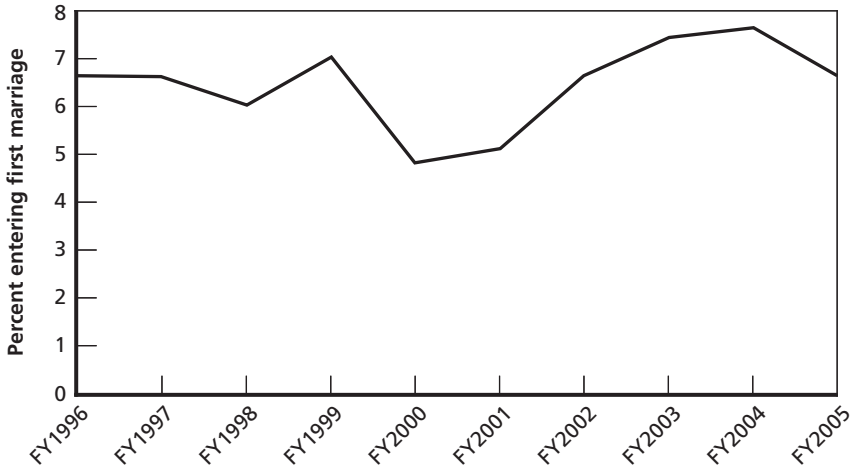
RAND *MG599-4.47*

more likely to be married than enlisted members, and these differences are stable across time. In FY2005, across both services of the National Guard, 32.6 percent of enlisted women, 51.6 percent of enlisted men, 55.5 percent of female officers, and 77.4 percent of male officers were married.

Rates of First Marriage While in the Service

As was true for the reserve services, data on marital status upon accession are not available for the National Guard. Thus, to assess possible changes in the perceived benefits of marriage for the National Guard, we examined rates of transition from never married to married. Trends in those rates for the entire National Guard are presented in Figure 4.48. Comparing these trends with trends in the reserve services (Figure 4.35) and active component (Figure 4.11) reveals similar patterns of transition into marriage across all services and components. Between FY1996 and FY2003, the patterns are virtually identical, with a tendency toward declining rates of first marriage until FY2000, followed by increases through FY2003. In the active component, rates of entry

Figure 4.48
Percentage Entering First Marriage in the National Guard



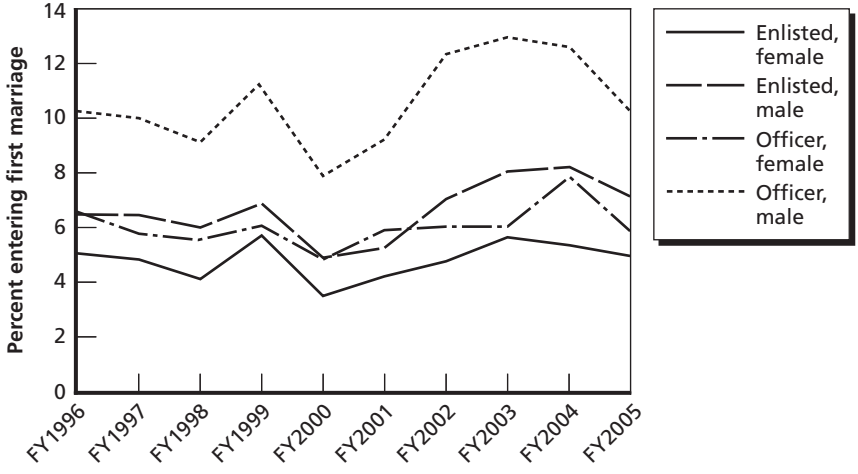
RAND *MG599-4.48*

into first marriage continued to increase through FY2005, whereas in the National Guard, rates peaked in FY2004 and then declined slightly in FY2005. In FY2005, 6.6 percent of previously unmarried service members were married.

The general trend described in Figure 4.48 is replicated in Figures 4.49 and 4.50, which describe trends in rates of entry into first marriage for the Army National Guard and the Air National Guard, respectively.

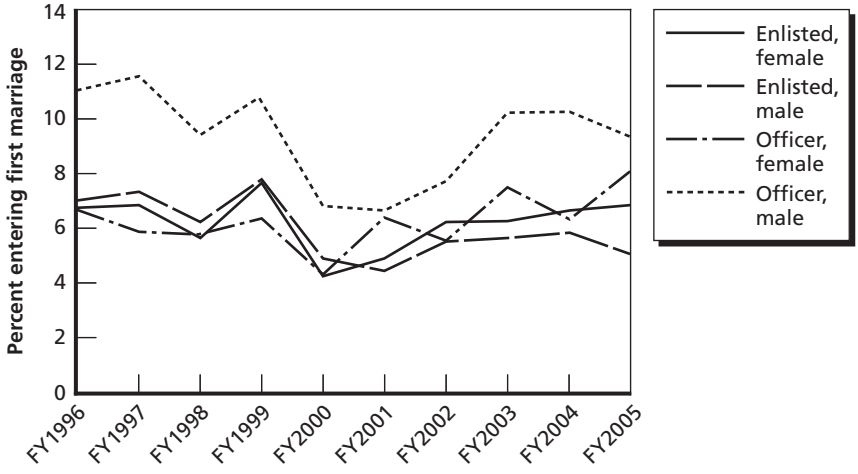
Comparing the trends described in Figure 4.49 with those for the Army Reserve (Figure 4.36) and active Army (Figure 4.12) reveal similar changes over time in all three components. Rates of entry into first marriage within the Army National Guard had been declining overall prior to FY2000; since then, rates have generally increased for all ranks and genders. In FY2005, unmarried service members in the Army National Guard were married at rates of 10.3 percent for male officers, 7.1 percent for enlisted men, 5.8 percent for female officers, and 4.9 percent for enlisted women.

Figure 4.49
Percentage Entering First Marriage in the Army National Guard



RAND *MG599-4.49*

Figure 4.50
Percentage Entering First Marriage in the Air National Guard



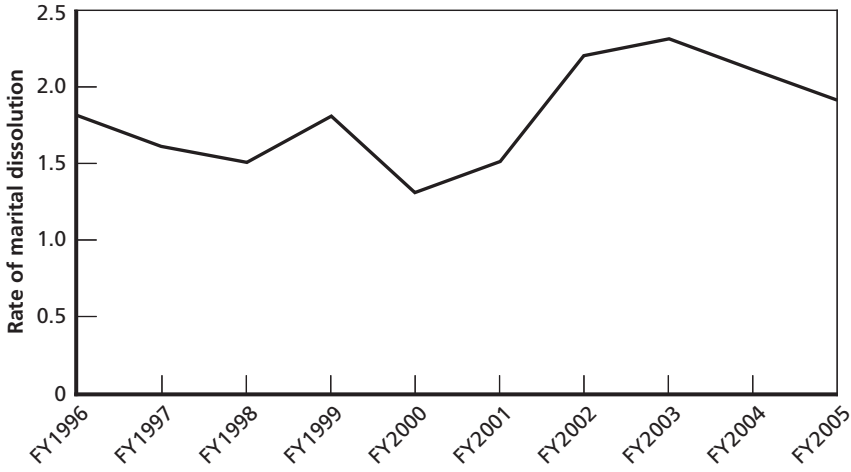
RAND *MG599-4.50*

Comparing the trends described in Figure 4.50 with those for the Air Force Reserve (Figure 4.38) and active Air Force (Figure 4.14) also reveals similar changes over time in all three components. Rates of entry into first marriage within the Air National Guard had been declining overall prior to FY2000; since then, rates have generally increased for all women and for male officers, and have remained relatively stable for enlisted men. In FY2005, unmarried service members in the Air National Guard were married at rates of 9.3 percent for male officers, 5.0 percent for enlisted men, 8.0 percent for female officers, and 6.8 percent for enlisted women.

Rates of Marital Dissolution

Figure 4.51 describes trends in rates of marital dissolution within the National Guard. As was true for the other components analyzed here, trends in rates of marital dissolution map closely onto trends in rates of entry into first marriage (Figure 4.48). Just as rates of entry into first marriage within the National Guard generally declined between FY1996 and FY2000, so did rates of marital dissolution. From FY2000

Figure 4.51
Rates of Marital Dissolution Across All Services of the National Guard



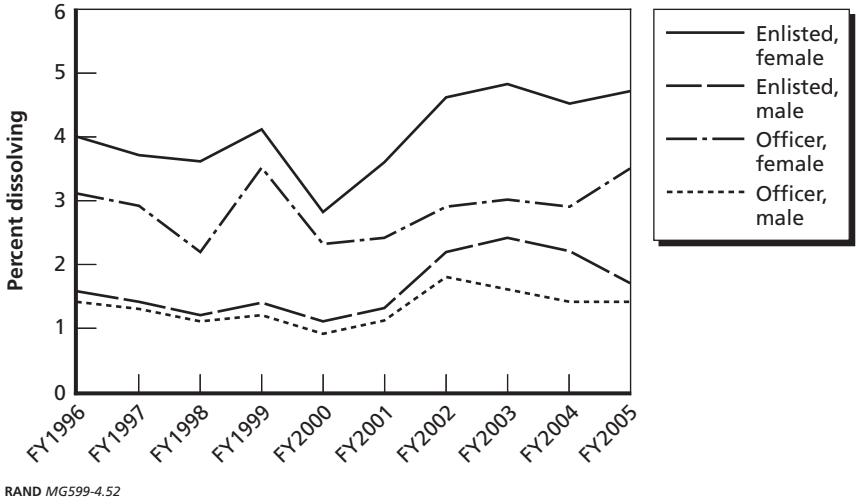
RAND *MG599-4.51*

through FY2003, rates of marital dissolution increased sharply. Despite declines over the next two years, rates in FY2005 remain slightly higher than at any point prior to FY2000. In FY2005, 1.9 percent of those members of the National Guard who were married at the start of the year had dissolved their marriages by the end of it.

The consistent differences in rates of marital dissolution across gender and rank that have been observed in the other components are also observed in the National Guard, such that women and enlisted members are at higher risk than men and officers. In FY2005, 4.2 percent of initially married enlisted women dissolved their marriages, compared with 1.7 percent of enlisted men, 3.4 percent of female officers, and 1.3 percent of male officers.

Figure 4.52 describes trends in rates of marital dissolution in the Army National Guard. These trends resemble those observed in the Army Reserve (Figure 4.41) and the active Army (Figure 4.18). In all three services, rates of dissolution had been declining until FY2000, but then increased for all ranks and genders after FY2000, and the increases have been greatest for women. By FY2005, rates of marital

Figure 4.52
Rates of Marital Dissolution in the Army National Guard

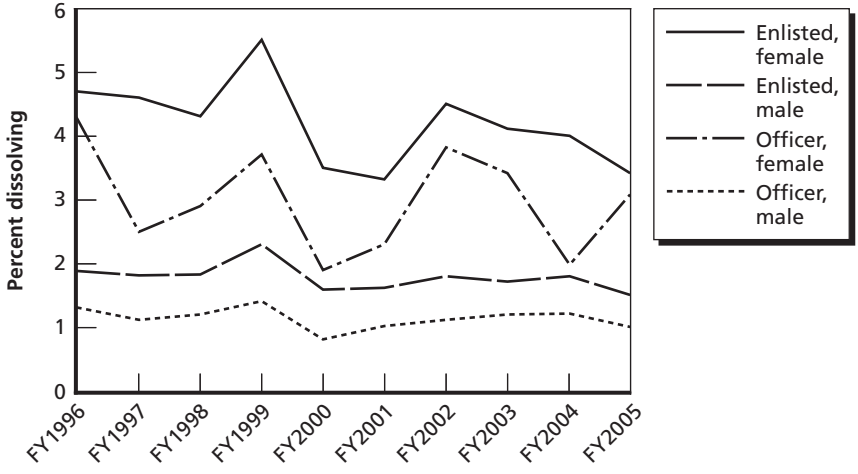


RAND *MG599-4.52*

dissolution in the Army National Guard were only slightly higher than they were in FY1996, such that, among those who were married at the beginning of FY2005, 4.7 percent of enlisted women, 3.5 percent of female officers, 1.7 percent of enlisted men, and 1.4 percent of male officers dissolved their marriages.

Figure 4.53 describes trends in marital dissolution for the Air National Guard. Because the raw number of dissolutions is low for women, those estimates are unstable and less reliable. Keeping that in mind, the trends described in this figure generally mirror the trends described previously for the Air Force Reserve (Figure 4.43) and the active Air Force (Figure 4.20). The overall trend in the Air National Guard, as in the Air Force Reserve, is a decline in marital dissolution from FY1996 levels. Of those married at the start of FY2005, 3.4 percent of enlisted women, 3.1 percent of female officers, 1.5 percent of enlisted men, and 1.0 percent of male officers had dissolved their marriages.

Figure 4.53
Rates of Marital Dissolution in the Air National Guard



RAND *MG599-4.53*

Discussion: Marriage and Marital Dissolution in the National Guard

Over the past ten years, rates of entering marriage in the National Guard resemble rates in the comparable reserve services more than they resemble comparable rates in the active Army and Air Force. This may be due to the fact that, for a specific service, the demographics of the National Guard units more closely resemble those of reserve units than those of active units. That is, members of the National Guard may be older and thus more likely to be married already. In contrast, overall rates of marital dissolution in the National Guard, reserve, and active services are much more similar, as are the trends in marriage and marital dissolution over time. Given the differences in the demands on each of these components, the similar marital outcomes lend further support to the idea that marital outcomes in the military may be associated with structural features of military service that affect all services equally more than with specific demands that affect different services differently.

CHAPTER FIVE

Evaluating Alternative Explanations for Rising Rates of Marital Dissolution in the Military

In the summer of 2005, data analyses prepared by Kris Hoffman of DMDC indicated that rates of divorce among active Army officers had nearly tripled in the two years between FY2002 and FY2004 and had nearly doubled between FY2003 and FY2004 alone. This reported trend raised concerns that military operations in Afghanistan and Iraq had placed excessive strains on the families of Army officers, but the severity of the increase also raised concerns about the quality of the data and the analyses. Chapter Four of this monograph presented a reanalysis of the data from DMDC that includes an additional wave of data from FY2005 and a refined definition of the outcome (i.e., the new analyses track marital dissolution, a construct that includes separations and annulments as well as divorce). These analyses confirm the elevated rate of marital dissolution for active officers in the Army during FY2004. Moreover, the new analyses reveal that rates of marital dissolution returned to prior levels for officers in FY2005.

The new analyses raise new questions about the reported trends in marital dissolution among Army officers. Specifically, what accounts for the elevated rates of marital dissolution observed in FY2004? Why did those rates drop off as rapidly as they increased? The available data do not allow definitive answers to these questions. Instead, this chapter presents a brief discussion of possible explanations.

Hypothesis No. 1: Coding Errors in the DMDC Database

It is said that data tend to be more accurate when they are likely to be used and thus less accurate when they are rarely used. Service personnel records have rarely been used to track rates of marriage and divorce, and so the way that transitions into and out of marriage have been coded has not received much attention in the past. Now that service records are being used in this way, problems with some of the data have come to light, although these problems are not yet well documented. For example, because personnel records rely on service members to report their changes of status, these records may be sensitive to new policies that motivate service members to report changes that they had previously experienced but left unreported. The consequence would be a bunching of recorded transitions into and out of marriage near the times of these policy changes, even if rates of actual family transitions were actually more evenly distributed over time. In other words, there is no guarantee that the recording of family transitions in the administrative data maps perfectly onto the timing of those transitions. At present, however, there is no direct evidence that this sort of bunching has occurred.

One known problem in the service records examined here occurred in the marital data for the Navy Reserve. In conversations with DMDC, the Navy Reserve indicated that marital status codes for many Navy reservists were altered when the reservists were activated in FY2001 and then altered again when they returned to reserve status in FY2002. As a result, although it appears as if rates of marriage and divorce in the Navy Reserve fluctuated dramatically during those years, it is likely that no major fluctuations actually occurred.

Could there be similar problems in the officer data for the active Army in FY2004? No one has identified a specific problem with the FY2004 data for the active Army officers. Moreover, when we spoke with Dr. Betty Maxfield, Chief of Army Demographics at the Human Resources Directorate in the Office of the Deputy Chief of Staff and asked for her thoughts about elevated divorce rates among officers in FY2004, she stated flatly that, based on her trust in the DMDC database, she believed the data to be accurate. She pointed to several other

sources of confidence in the data. First, she noted that the increase in estimated divorce rates began in FY2003 and then blossomed in FY2004. If the results are due strictly to error, one would not expect a trend across multiple years. Second, in independent analyses of the DMDC data that her office commissioned in 2005, she found evidence that, among Army officers, younger officers experienced higher rates of divorce than older officers. The fact that this result is consistent with expectations also contributes to her confidence in the data.

In contrast, DMDC itself has expressed reservations. When first asked about the elevated divorce rates for Army officers in FY2004, staff at DMDC did say that they were suspicious of the results when they first reported them in the summer of 2005. A follow-up inquiry to DMDC received the following reply from Debbie Eitelberg at DMDC on July 21, 2006:

> I've talked with the Army liaison, and he also feels that there was a data problem in 2004 that caused the spike. I'm attaching his best guess as to why: "Per our discussion, it is definitely a data problem in 2004. No one from the Army can tell me exactly what was the problem but I think it has to do [with] during the time the Army is upgrading the unit's system from SIDPERS to eMilpo."

Thus, there is some disagreement among people close to these data about how likely the data are to be accurate. A broad view of the data adds two more reasons to be cautious in interpreting the results for that year. First, whereas changes in rates of marital dissolution map closely onto changes in rates of entry into marriage across the analyses conducted by RAND, the elevated rates of dissolution for Army officers in FY2004 have no echo anywhere else in these data. That is, there is no increase of comparable severity in rates of entry into marriage for active Army officers during that year, even though other increases in dissolution do tend to correspond with similar increases in rates of marriage. Second, although trends in marriage and dissolution within each service are generally similar across the active and reserve components, the elevated dissolution rates for active Army officers in

FY2004 have no parallels in the data from the Army reserve or the Army National Guard.

In sum, there are multiple reasons to suspect that the estimated rates of marital dissolution for active Army officers in FY2004 are inaccurate but as yet no evidence of specific errors in the data.

Hypothesis No. 2: Policy Changes Affecting Active Army Officers

Despite reasons to be cautious about interpreting the FY2004 data for active Army officers, it remains possible that the elevated rates of marital dissolution in FY2004 reflect a real phenomenon occurring in active Army officers. If, for example, active Army officers were under unusual stress in FY2002 and FY2003, it might be expected that the most vulnerable marriages among those officers would be at high risk of dissolution by FY2004. Once those marriages ended, only the most resilient marriages would remain, possibly accounting for the return to normal rates of marital dissolution by FY2005.

The challenge for this sort of explanation lies in locating a demand or change in policy that would affect active Army officers but not enlisted members in the active Army, officers in other active services, or officers in the Army Reserve or Army National Guard. We have not been able to identify a change in policy or procedure that meets this criterion. For example, we spoke with Claudia Tamplin of the Center for Accessions Research, who described changes in recruitment strategies that have occurred over the past few years in the Army. Specifically, she reported that, immediately after 2001, Army recruiters began to devote additional resources to potential recruits with college experience, resulting in recruits who were older and more likely to be married upon accession. In the last two years, however, this emphasis has been replaced by a broader emphasis on volume, i.e., increasing the number of recruits at all levels. These changes may affect rates of marriage and dissolution in the Army, but there is no reason to expect that they would have affected officers more than enlisted members, that their effects would be drastic, or that their effects would be noticed more in

FY2004 than in any other year. Our discussion with Dr. Maxfield also yielded no specific ideas that might explain the elevated rates among Army officers in FY2004.

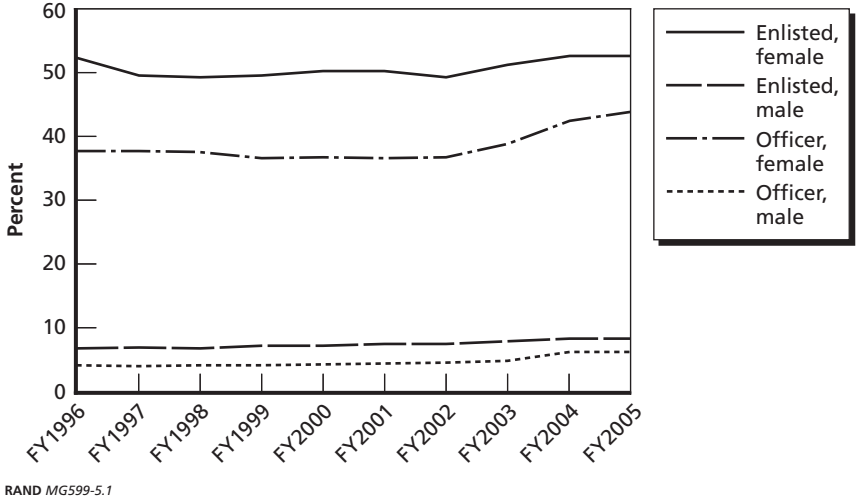
Hypothesis No. 3: Changes in Health Insurance Policy in 2002

One specific policy change that has been noted for its potential implications for military marriage is a change in federal health insurance policies that was instituted in 2001. In November of that year, the Veterans' Survivor Benefits Improvement Act of 2001 took effect (Barr, 2002). Unlike the existing health insurance programs in the military, the new program did not allow active members to sign their family members up for coverage by the program. Instead, eligible family members had to apply separately. Some have argued that the new policy may have affected dual-military couples differently from service members married to civilian spouses, with the consequence that dual-military couples may have been compelled to report their marriages in order to receive the new benefits. We were not able to confirm this, however.

If that were indeed the effect of the new policy, what impact might it have had on estimated trends in marriage and divorce rates? To the extent that the new policy required couples to report marriages that they would not otherwise have reported, the new policy would have been associated with an increase in estimated rates of marriage after FY2002. Moreover, to the extent that the policy affected dual-military couples but not marriages to civilians, we would expect to observe the increase only among the dual-military couples. With respect to divorce rates, these processes would lead to the same predictions: greater reporting of divorce and marital dissolution, but only among dual-military couples.

Is there any evidence of such trends? Figure 5.1 (which reproduces Figure 4.22) tracks rates of dual-military marriage over the past ten fiscal years across all the active services.

Figure 5.1
Rates of Dual-Military Marriage Across the Active Services



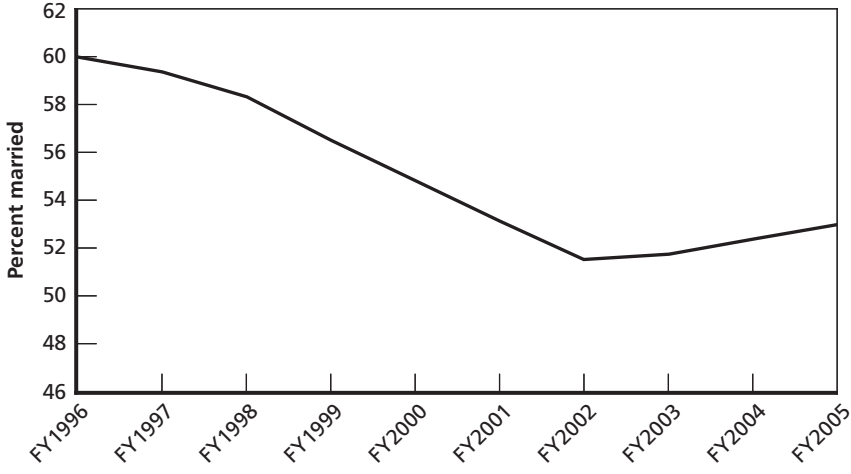
RAND *MG599-5.1*

Figure 5.1 does indicate that estimated rates of dual-military marriage, after holding quite steady between FY1998 and FY2002, increased somewhat between FY2003 and FY2005. This increase was most notable for female officers and very slight for enlisted women and men of all ranks. It is worth noting, however, that rate of all marriages increased slightly across the active military over the same period, as described by Figure 5.2 (which reproduces Figure 4.1).

Thus, the marriage rates alone are insufficient to support the hypothesis that changes in the way dual-military couples report their marriages are driving these trends.

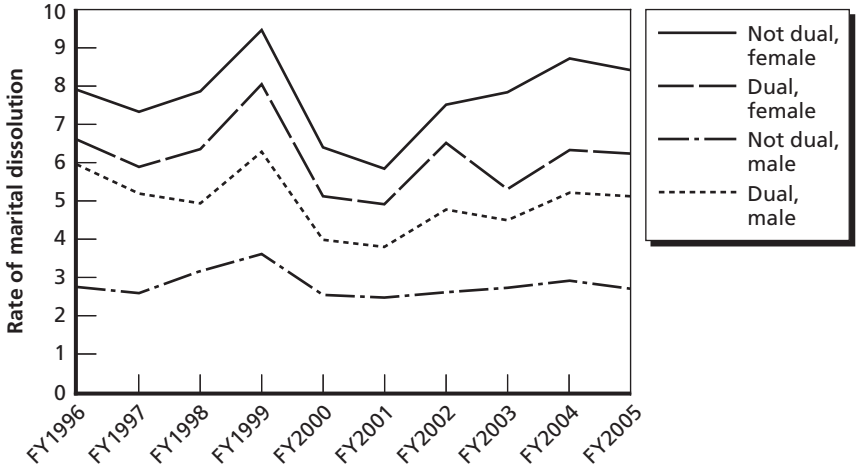
A clearer test of this idea would be to compare rates of marital dissolution for dual-military marriages and those for marriages to civilians. If a policy change resulted in more reporting of transitions into and out of dual-military marriages, then the trend data should reveal changes in trends in marital dissolution for dual-military marriages but not for marriages to civilians. Figure 5.3 and 5.4 address this issue, first for active enlisted service members and then for active officers.

Figure 5.2
Percentage Married Across All Active Services



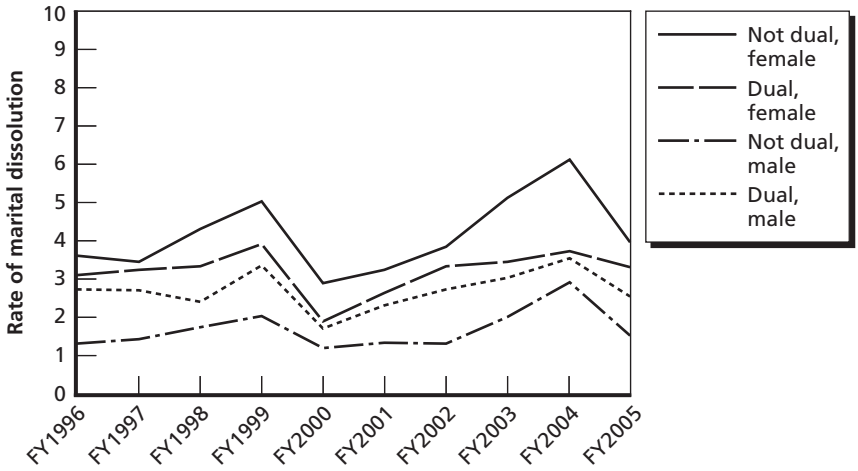
RAND *MG599-5.2*

Figure 5.3
Rates of Marital Dissolution in Dual-Military Marriages Among Active Enlisted Service Members



RAND *MG599-5.3*

Figure 5.4
Rates of Marital Dissolution in Dual-Military Marriages Among Active Officers



RAND *MG599-5.4*

These figures reveal that, although rates of marital dissolution differ across dual-military marriages and marriages to civilians, changes in these rates over time are similar across groups. Thus, there is little evidence that insurance policy changes that may have affected the reporting of dual-military marriages account for observed trends in marriage and marital dissolution in the active military.

Hypothesis No. 4: Demographic Changes in Response to the Threat of Deployment

A final hypothesis suggests that observed changes in rates of marital dissolution in the military may correspond with concurrent changes in the demographics of those who serve. There are several reasons to expect that the age of the military may have changed in recent years, although different reasons predict different sorts of changes. One possibility is that the recent demands on the military (e.g., high rates of deployment, increased exposure to combat) may have decreased reten-

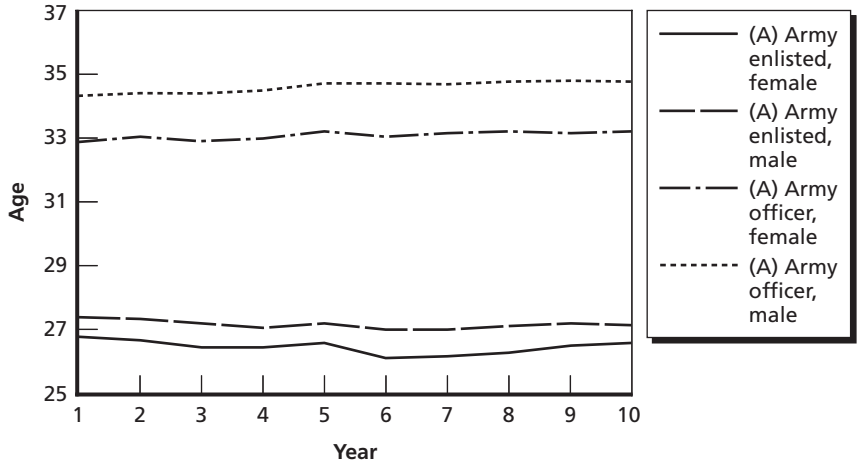
tion, especially among those members with reasonable expectations of finding alternative employment. Those who have served in the military during less-demanding periods may be especially likely to leave, with the consequence that those who remain would be younger and less experienced. A second possibility is that the demands on the military have impeded recruitment, slowing the influx of the youngest service members and pushing the average age of the military upward. It is also possible that both these pressures have been operating at once, leading to a smaller overall force but no mean changes in age.

Service personnel records contain few variables suitable for addressing these possibilities directly, but they do contain data on the age of the service member. To address questions about demographic changes in the military over time, we examined trends in the average age of service members over the past ten years, comparing these trends with concurrent trends in marriage and marital dissolution. To the extent that the average age of service members, and of married service members in particular, has declined in recent years, these changes might account for rising rates of marital dissolution in the same period, because the marriages of younger people are generally more vulnerable to dissolution.

How has the average age of service members changed over time? As Figure 5.5 makes clear for the active Army, the average age of service members has been fairly constant over the past ten years, and has even risen slightly for male officers. There is no obvious evidence of disjunctions in these trends in recent years. The trends are not much different in the other services (not shown).

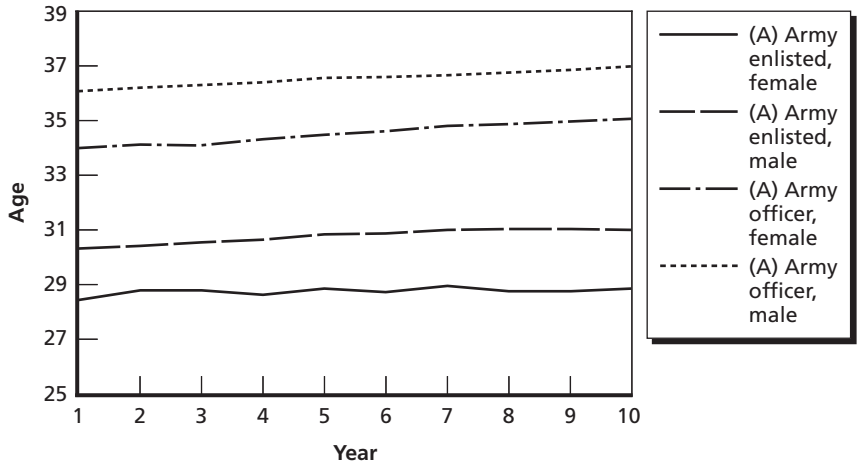
Because not all service members are married, mean trends across all service members may obscure more significant changes among married service members in particular. Are there changes in the average age of married service members that would account for increases in marital dissolution in recent years? No. On the contrary, among married service members, there is a more pronounced increase in average age, as revealed in Figure 5.6 for the active Army.

Figure 5.5
Age of Active Army Members, 1996–2005



RAND *MG599-5.5*

Figure 5.6
Age of Married Active Army Members, 1996–2005

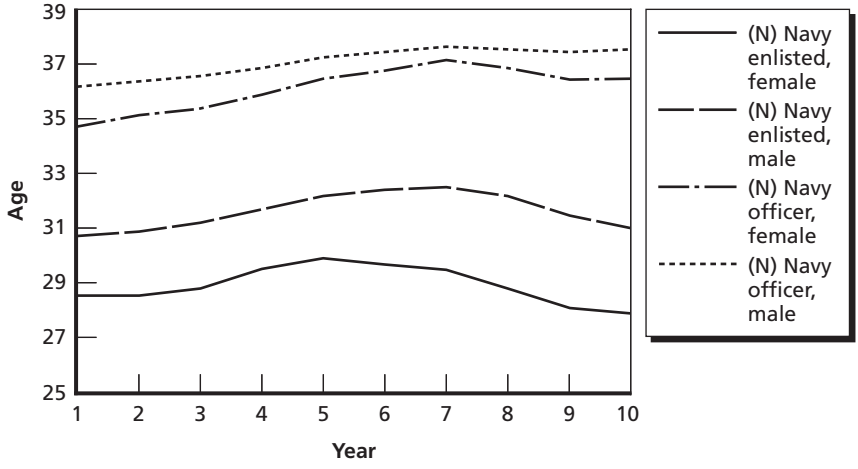


RAND *MG599-5.6*

Trends in the Air Force and Marine Corps (not shown) are similar. Trends among married members of the Navy are slightly different, as shown in Figure 5.7, but here, too, the trends do not correspond to trends in marriage or marital dissolution of the same period.

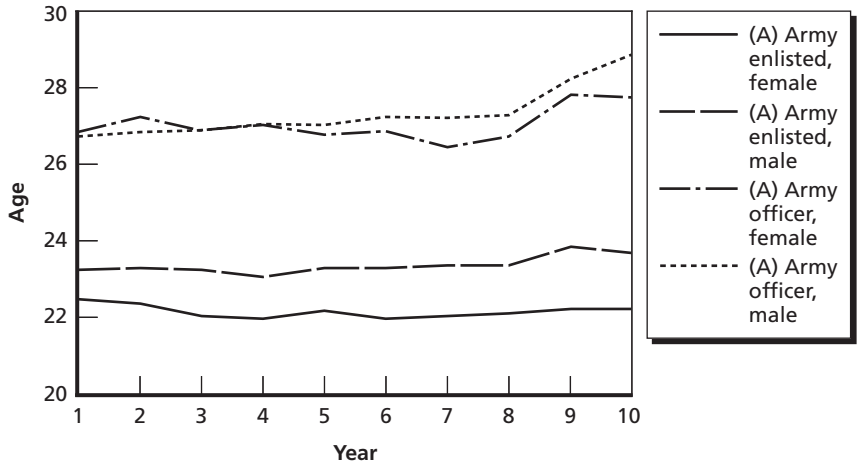
Another possibility is that changes in the age of those who remain in the military affect selection into marriage. In other words, perhaps those who are entering marriage in recent years are doing so at different ages than previously. To address this possibility, Figure 5.8 tracks changes in the ages of those entering marriage within the active Army each year from FY1996 through FY2005. This figure does reveal a notable change in the age of those entering marriage among Army officers in the past two years (FY2004 and FY2005). In those years, there has been a marked increase in the age of male and female Army officers entering marriage. There was no comparable increase in the age of those entering marriage in the other services (not shown).

Figure 5.7
Age of Married Active Navy Members, 1996–2005



RAND *MG599-5.7*

Figure 5.8
Age of Those in the Active Army Entering Marriage for the First Time, 1996–2005



RAND *MG599-5.8*

Overall, the average age of the military has increased slightly and gradually over the past ten years. Notable disjunctions are observed only for Army officers, whose age at marriage has increased by nearly two years in the past two years. Could these changes account for higher rates of marital dissolution over the same period? The analyses described here are not able to test this idea directly. However, the prior research reviewed in Chapter Three of this monograph suggests that service members who are older at marriage have more stable marriages, a result that echoes similar results in civilian populations. Such results suggest that the trends described in this monograph would lead to lower rates of marital dissolution, not the higher ones that are being observed. In sum, our preliminary analyses suggest that changes in the average age of service members who remain in the military are unlikely to be accounting for changes in rates of marital dissolution within recent years.

Conclusion

There are known errors in the service records maintained by DMDC, and these errors stem from inconsistencies in the way different services and components have coded for marital status over the past ten years. The elevated rates of marital dissolution observed in active Army officers in FY2004 may stem from such an error, although no specific error has yet been identified. Yet concerns about the data are exacerbated by the fact that the estimates for that fiscal year are inconsistent with other broad patterns and trends in the data, and by the fact that no available explanations account for drastic changes that might have affected active Army officers but not any other group.

To the extent that there are errors in the service record data, it is unlikely that these errors will ever be corrected retrospectively. All that can be done is to catalogue those errors and make a listing of the known errors easily accessible so that those who wish to use the data need not rediscover the errors over and over again. It also seems warranted to consider ways to standardize the coding of service personnel data so that future data are consistent across services. We understand that attempts to consolidate and standardize the collection of these data are under way.

To the extent that the data for FY2004 may be accurate, then the return to normal rates of dissolution for Army officers that is observed in FY2005 suggests that the problems faced by that group may have been temporary, that vulnerable couples have now been eliminated, or that efforts to support the families of Army officers have begun to work.

CHAPTER SIX

The Direct Effects of Deployments on Marital Dissolution

The analyses described thus far in this monograph have been purely descriptive, tracking changes in rates of marriage and marital dissolution across the past ten years. To understand the effects of recent military actions on service members and their marriages, such analyses are limited in several ways. First, as Pavalko and Elder observed, "aggregated rates of marriage do not tell us which marriages were at greatest risk" (1990, p. 1215). Second, tracking trends within the military as a whole does not provide any direct insight into the question of greatest interest to military leaders: How does being deployed affect service members' subsequent risk of marital dissolution? Although rates of marital dissolution appear to have increased during a period when rates of deployment have increased, focusing solely on mean changes does not address whether the experience of deployment directly predicts changes in risk of dissolution. Filling this gap is the goal of the current chapter.

Methodological Issues

Addressing this question requires analyses that (1) draw upon longitudinal data that tracks the marital status of individual service members before, during, and after their deployments, and (2) employ multivariate analyses capable of estimating the effects of being deployed while

controlling for other demographic variables likely to be associated with risk of marital dissolution (e.g., gender, race, age at marriage).

The analyses described in the rest of this chapter address both these requirements. To conduct the analyses, we drew from the quarterly personnel summaries provided by DMDC to create a longitudinal data set that linked information from individual service members across quarters. This data set included information on marital status, gender, race and ethnicity, age at marriage, and whether or not the service member had children, for each service member and for each quarter that the individual served between FY1996 and FY2005. This file was then linked with a separate file provided by DMDC that contained deployment histories for all service members deployed since the onset of military operations in Afghanistan and Iraq. Because personnel tempo data have been collected by DMDC only since FY2002, we could only link marital status and demographic data since FY2002 to this file. Moreover, to control for prior marital status, these analyses were conducted only on individuals who entered into marriages after the current military operations began. The result was a file containing data from 48 consecutive quarters that allowed us to map, from FY2002 through FY2005, the timing and cumulative length of time spent deployed against the timing of individual marriages and marital dissolutions. This file consists of data from 566,895 individual service members.

To evaluate the effect of deployments on subsequent risk of marital dissolution, we examined the new data set with multiple-spell discrete-time survival analyses (Willett and Singer, 1995). Because this method allows the model variables to be updated at each time period during the marriage, there were several benefits to this approach. First, unlike multivariate regression, survival analyses account for the timing of the dependent variable, i.e., whether or not those service members who were married during their deployments experienced a marital dissolution subsequent to their deployments. Second, this approach allowed us to account for the cumulative effects of longer or shorter periods of deployment. Third, it allowed us to ensure that individuals were matched on their marital duration in all analyses—i.e., that the analyses evaluated risk of dissolution for individuals, taking into account

how long they had been married. Fourth, this approach allowed us to conduct multivariate analyses at the same time, controlling for other demographic variables known to be associated with risk of marital dissolution.

Modeling Deployment Effects

To account for risk of marital dissolution, we estimated models that contained three groups of variables. The first group consisted of demographic data treated as *control variables*. These included gender (1 = female; 0 = male), race (e.g., 1 = black; 0 = white), age when married, presence of children (1 = yes; 0 = no), and the interaction between children and gender (i.e., the product of the gender variable and the children variable, capturing whether the effect of children on risk of dissolution differs by gender). Examining these variables provides a check on the analyses—i.e., there can be greater confidence in the results of the analyses of deployment effects to the extent that results obtained for the control variables match results obtained in other research addressing the effects of the same variables on marital dissolution.

The second group consisted of two variables created to test the *direct effects* of deployment on subsequent risk of marital dissolution. One of these was the total number of days deployed while married that the individual had accumulated by a given marital duration. This variable estimated the linear effect of the number of days deployed on dissolution risk. The other variable entered in this group was a squared term designed to estimate curvilinear effects, i.e., whether the effects of shorter deployments differ from the effects of longer deployments. Preliminary analyses suggested that curvilinear effects were rarely significant and were very small even when they were significant. To simplify the presentation of the results, the estimates of the curvilinear effects are not presented below, but the term was included in all models estimated.

The third group consisted of *interaction terms* created to estimate whether the effects of deployment are moderated by any of the control variables examined in the first group. All three groups of variables

were entered simultaneously, so the results for each set of variables are adjusted for the other variables in the model. Analyses were run separately on data from married enlisted members and married officers in each of the services of the active and reserve components, including the National Guard.

Deployment Effects in the Active Component

Results of analyses of data from the active component are presented in Table 6.1. With respect to the control variables, the most consistent results emerge for gender and age when married. Consistent with the descriptive analyses described earlier, women are at significantly greater risk of experiencing marital dissolution across ranks and in every active service. The one exception to this pattern is the result for Army officers, where women appear to be at significantly lower risk for experiencing marital dissolution. The aforementioned anomalies in the data for Army officers in FY2004 suggest that this counterintuitive result should be considered with caution. Consistent with research on civilian marriages, service members who are older when they marry are at significantly reduced risk for marital dissolution, and this effect emerges across ranks and in all services, except for officers in the Air Force, where the estimate is in the same direction but fails to reach statistical significance. For enlisted members in all services, and for officers in the Army, the presence of children appears to have a stabilizing effect on marriage, such that members with children are at significantly lower risk of marital dissolution than are members without children. Having children is similarly associated with reduced risk of divorce in civilian marriages (Karney and Bradbury, 1995). However, the test of the interaction between children and gender proved significant for enlisted members in the Army, Navy, and Air Force: Having children did not reduce the risk of marriage dissolution as much for women members as it did for men. Finally, whereas in the civilian population, rates of divorce are nearly twice as high for blacks than for whites, within the active military, the risk of dissolution is significantly higher for blacks

Table 6.1
Survival Analysis Results for the Active Component

	Army				Navy				Air Force				Marine Corps			
	Enlisted		Officer		Enlisted		Officer		Enlisted		Officer		Enlisted		Officer	
Variable	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*
Control variables																
Gender (female vs. male)	*.131*	*.0035*	**–.332**	**<.0001**	*.326*	*<.0001*	*.384*	*.003*	*.619*	*<.0001*	*.670*	*<.0001*	*.708*	*<.0001*	*1.178*	*.0009*
Race (black vs. white)	*.125*	*.0012*	*.227*	*.0009*	.006	.8839	*.399*	*.0046*	*–.060*	.2317	.366	.1594	.023	.7698	.442	.3620
Age when married	**–.061**	**<.0001**	**–.018**	**<.0001**	**–.060**	**<.0001**	**–.065**	**<.0001**	**–.010**	.0101	–.002	.7283	**–.095**	**<.0001**	**–.095**	**<.0001**
Children (yes vs. no)	**–.507**	**<.0001**	**–.124**	**.0252**	**–.285**	**<.0001**	.003	.9752	**–.495**	**<.0001**	–.229	.2541	**–.354**	**<.0001**	–.194	.6076
Children x gender	*.804*	*<.0001*	*.704*	*<.0001*	*.348*	*<.0001*	.011	.9565	*.306*	*<.0001*	.263	.3307	.028	.8280	.624	.3909
Total days deployed while married	**–.006**	**<.0001**	.001	.4727	**–.004**	**<.0001**	**–.003**	**.0008**	*.005*	*<.0001*	*.007*	*.0002*	**–.006**	**<.0001**	**–.014**	**.0125**
Moderators of deployment effects																
Gender (female vs. male)	*.002*	*<.0001*	–.000	.8754	*.002*	*<.0001*	.001	.3307	*.001*	*.0061*	.0009	.5190	*.002*	*.0003*	–.003	.4043
Race (black vs. white)	**–.0005**	**.0274**	.000	.3532	**–.000**	**.1587**	**.001**	**.2021**	–.001	.2655	–.001	.8462	–.000	.6266	.002	.4051
Age when married	*.0002*	*<.0001*	**.000**	**.3385**	*.0002*	*<.0001*	*.0002*	*<.0001*	–.000	.0287	.000	.6915	*.0003*	*<.0001*	*.0004*	*.0310*
Children (yes vs. no)	**–.001**	**.0072**	**–.002**	**<.0001**	**–.001**	**<.0001**	**–.004**	**<.0001**	**–.001**	**.0316**	–.002	.1751	**–.002**	**<.0001**	–.003	.2128

NOTE: All variables were entered simultaneously. Positive coefficients (in *italics* when statistically significant at $p < .05$) indicate variables associated with increased risk of marital dissolution subsequent to deployment. Negative coefficients (in **bold** when statistically significant at $p < .05$) indicate variables associated with reduced risk of marital dissolution subsequent to deployment.

only in the Army (among both enlisted personnel and officers) and among Navy officers, and within these groups the effects are relatively small. This result is consistent with other research on military families and decisionmaking that suggests that racial differences in family outcomes are greatly reduced within the military compared with civilians (e.g., Lundquist, 2004).

Controlling for these effects, the direct effect of the number of days deployed while married on subsequent risk of dissolution is significant for every group in the active military except for officers in the Army. However, the direction of the effect varies across the services. For the Air Force, the longer a service member is deployed while married, the greater the subsequent risk of marital dissolution—and this holds true for both enlisted members and officers. This is the effect that media reports would lead us to expect. However, for enlisted members in the Army, Navy, and Marines, and for officers in the Navy and Marines, the longer that a service member is deployed while married, the *lower* the subsequent risk of marital dissolution. In these groups, deployment appears to enhance the stability of the marriage: The longer the deployment, the greater the benefit.

The effects of deployment are moderated in important ways by the demographic variables we examined initially. For example, for enlisted members in all the services, the effects of deployment are significantly different for women than for men. In the Army, Navy, and Marines, this means that deployment reduces the risk of dissolution less for women than for men. In the Air Force, it means that deployment increases the risk of dissolution more for women than for men. The presence of children also moderates the effects of deployment, such that, for enlisted members in all the services and for officers in the Army and Navy, deployment reduces the risk of dissolution more for those with children than those without. Age when married moderates the effect of dissolution for enlisted members in the Army, Navy, and Marines, and for officers in the Navy and Marines. This effect was in an unexpected direction, indicating that those who were younger when they entered marriage benefited significantly more from deployments than those who were older. Finally, race moderated the effect of deployment only among enlisted members of the Army, where deploy-

ment reduced the risk of marital dissolution more for blacks than for whites.

Deployment Effects in the Reserve Component

Results of analyses of data from the reserve component are presented in Table 6.2. In general, we expected the pattern of results for the reserve component to be weaker than the results for the active component because reservists, being older than active members on average, are substantially less likely to be entering their first marriages in a given year, as revealed by the figures presented in Chapter Four. Because these analyses were restricted to data from those who entered marriage after FY2001, the sample sizes for these analyses, especially for the Marine Corps officers, were relatively low, weakening the power of these analyses to detect significant effects. Despite these limitations, however, the general pattern of results for the analyses of the reserve data are similar to the results obtained from the active data.

With respect to the control variables, age when married continued to account for the risk of marital dissolution for all groups except Marine Corps officers. As we saw for the active component, the older the service member upon marriage, the lower the subsequent risk of marital dissolution. In contrast, the gender effects observed in the active data were not significant in the reserve data, and this is likely due to the low number of female reservists entering their first marriages during the observation period.

Controlling for the demographic variables, the number of days deployed while married was a significant predictor of subsequent risk of marital dissolution for enlisted members and officers in the Army Reserve, for officers in the Navy Reserve, and for enlisted members of the Air Force Reserve. For these groups, the longer that a service member was deployed while married, the lower the subsequent risk of marital dissolution. For enlisted members of the Navy Reserve, and for officers in the Air Force Reserve, the effects were in the same direction but did not reach significance. The significant effects for enlisted members of the Air Force Reserve stand in direct contrast to the results

Table 6.2
Survival Analysis Results for the Reserve Component

	Army				Navy				Air Force				Marine Corps			
	Enlisted		Officer		Enlisted		Officer		Enlisted		Officer		Enlisted		Officer [a]	
Variable	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*
Control Variables																
Gender (female vs. male)	.068	.2835	.187	.1922	.108	.0873	–.075	.4610	–.092	.6676	.1627	.7843	.173	.5706		
Race (black vs. white)	*.130*	*.0219*	.208	.1181	**–.198**	**.0002**	-.203	.1359	**–.975**	**.0024**	1.024	.1265	–.368	.2338		
Age when married	**–.036**	**<.0001**	**–.050**	**<.0001**	**–.016**	**<.0001**	**–.046**	**<.0001**	**–.073**	**<.0001**	**–.189**	**<.0001**	**-.099**	**<.0001**		
Children (Yes vs. No)	–.000	.9973	.124	.3501	*.190*	*<.0001*	.047	.4164	–.138	.5371	.461	.5033	.339	.0838		
Children x gender	*.588*	*<.0001*	.353	.1111	.108	.2184	.050	.7368	.346	.2524	.8289	.2971	.347	.4774		
Total days deployed while married	**–.004**	**<.0001**	**–.007**	**.0029**	–.002	.2850	**–.016**	**.0001**	**–.006**	**.0026**	–.006	.3203	.000	.9813		
Moderators of deployment effects																
Gender (female vs. male)	*.003*	*<.0001*	.002	.2113	*.003*	*.0186*	*.007*	*<.0001*	*.003*	*.0003*	.004	.2298	.003	.0583		
Race (black vs. white)	–.001	.1749	–.000	.9620	–.0008	.5943	.000	.8601	.002	.0539	–.001	.8091	*.003*	*.0152*		
Age when married	.0001	*.0019*	*.0002*	*.0137*	*.0003*	*<.0001*	*.0003*	*.0014*	*.0002*	*.0015*	*.0005*	*.0115*	–.000	.5722		
Children (yes vs. no)	**–.002**	**<.0001**	–.001	.1733	–.001	.2970	–.0014	.3251	–.000	.4999	–.007	.0822	**–.004**	**.0020**		

NOTE: All variables were entered simultaneously. Positive coefficients (in *italics* when statistically significant at p < .05) indicate variables associated with increased risk of marital dissolution subsequent to deployment. Negative coefficients (in **bold** when statistically significant at p < .05) indicate variables associated with reduced risk of marital dissolution subsequent to deployment.

[a] Due to the small sample size, the model for reserve officers in the Marine Corps could not be estimated reliably.

for the enlisted members of the active Air Force, where the number of days deployed while married has significant effects in the opposite direction. Otherwise, these results replicate the results obtained for the active component.

The significant moderators of the effects of deployment are also similar between the reserve and active components. In particular, being female reduced the effects of deployment on subsequent risk of dissolution for enlisted reservists in the Army, Navy, and Air Force, and for officers in the Navy Reserve. In contrast, race moderated the deployment effect only among enlisted reservists in the Marine Corps (deployment had a weaker effect for blacks than for whites), and having a child moderated the deployment effect only among enlisted reservists in the Army (deployment had a larger effect for those with children than for those without).

Deployment Effects in the National Guard

Results of analyses of data from the National Guard are presented in Table 6.3. As noted earlier, rates of entering marriage in the National Guard resemble rates for the reserve component more than they do rates for the active component. Because our analyses were restricted to those entering marriage after FY2001, our sample sizes were relatively low. Nevertheless, the overall pattern of results obtained from the National Guard data resembled the patterns observed in the active and reserve data. With respect to the control variables, age when married continued to demonstrate significant effects, such that those who are older when they enter marriage have lower risk of marital dissolution—and this holds true across ranks and services. Among enlisted members of the Army National Guard, all the other control variables examined here are also significant. Whereas the effects of gender, children, and the interaction between gender and children are all the same as within the active Army, the effects of race are reversed: Blacks in the Army National Guard had a lower risk of marital dissolution than whites, whereas the opposite was true for the active Army. None of the

Table 6.3
Survival Analysis Results for the National Guard Component

	Army				Air Force			
	Enlisted		Officer		Enlisted		Officer	
Variable	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*	Coeff.	*p*
Control variables								
Gender (female vs. male)	*.305*	*.0002*	.239	.4152	–.056	.7118	–.1192	.7960
Race (black vs. white)	**–.504**	**<.0001**	.098	.8028	–.144	.5827	–1.047	.4119
Age when married	**–.062**	**<.0001**	**–.069**	**<.0001**	**–.084**	**<.0001**	**–.167**	**.0001**
Children (yes vs. no)	**–.175**	**.0115**	–.458	.0787	.250	.0780	–.161	.7548
Children x gender	*.404*	*.0009*	.204	.6965	.1667	.3940	–1.258	.2634
Total days deployed while married	**–.004**	**<.0001**	**–.006**	**.0311**	**–.005**	**<.0001**	**–.015**	**.0001**
Moderators of deployment effects								
Gender (female vs. male)	*.002*	*<.0001*	*.003*	*.0189*	*.003*	*<.0001*	*.006*	*.0188*
Race (black vs. white)	–.001	.2744	.000	.9797	–.002	.3300	.003	.6085
Age when married	*.00009*	*<.0001*	.000	.2027	*.0003*	*.0001*	*.0004*	*.0002*
Children (yes vs. no)	**–.0009**	**.0028**	–.000	.8056	**–.002**	**.002**	.000	.7139

NOTE: All variables were entered simultaneously. Positive coefficients (in *italics* when statistically significant at p < .05) indicate variables associated with increased risk of marital dissolution subsequent to deployment. Negative coefficients (in **bold** when statistically significant at p <. 05) indicate variables associated with reduced risk of marital dissolution subsequent to deployment.

other control variables had significant effects in the other segments of the National Guard.

When we controlled for these effects, the number of days deployed while married was a significant predictor of subsequent risk of marital dissolution for enlisted members and officers in both services of the National Guard, such that members who experienced more days of deployment were at lower subsequent risk of marital dissolution. It is worth noting that this effect held true within the Air National Guard as well, in contrast to the results for the active Air Force, where the number of days deployed increased the subsequent risk of divorce.

Gender was a significant moderator of the effects of deployment in all segments of the National Guard, such that the effects of deployment were weaker for women than for men. Age at marriage was a significant moderator for enlisted members of the Army and Air National Guard and for officers in the Air National Guard, such that the effects of deployment were greater for those who were younger when they entered their first marriages. The presence of children was a significant moderator for enlisted members of the Army and Air National Guard, such that the effects of deployment were greater for those with children than for those without. Race was not a significant moderator of these effects for any segment of the National Guard. All these moderating effects are similar to the moderating effects observed in the other components.

Discussion of Deployment Effects

Most people who write or speak publicly about military marriage think that they understand how marriages are affected by the experience of deployment. The widespread assumption is that the effects of deployment on marriage are severe and negative, such that couples who are separated by deployment will be at higher risk of divorcing after they are reunited (e.g., Alvarez, 2006). Prior research addressing this issue has addressed small samples, focus groups, or self-reports from affected spouses. In contrast, the analyses described here examined transitions into and out of marriage as reflected in the personnel service records of

the entire military since the onset of military operations in Afghanistan and Iraq. Analyses of these data suggest that the true effects of deployment on military marriage may not be what conventional wisdom expects them to be. Across the military, the expected effect of deployment was observed only for enlisted members and officers in the active Air Force, for whom risk of dissolution was higher for those who experienced more days deployed while married. For all other services in the active component, and for all services in the reserve and National Guard services, the effects of deployment were either insignificant or beneficial—i.e., those deployed more days while married were at significantly lower risk of subsequent marital dissolution. The consistency of the results across the services and components, added to the fact that the analyses of the control variables replicate the results obtained from similar analyses of civilian samples, heightens confidence in these findings.

Given the stresses associated with deployment, including physical separations, adjusting to new family roles, and exposure to combat, how can we understand the observation that deployments are generally associated with a lower risk of dissolution for military marriages? The answer may lie in the fact that deployment, for all its negative aspects, has positive aspects as well. For example, focus groups exploring the effects of deployment on service members indicate that many service members find deployments meaningful and fulfilling (Hosek, Kavanagh, and Miller, 2006). Time spent deployed provides some service members with a sense of using their training to further an important national goal, in contrast to time spent serving at home. For those considering a career in the military, deployments provide opportunities for advancement that are unmatched by opportunities available while serving at home. More concretely, being deployed is associated with a higher level of pay and thus a higher level of family income, and this holds true for both active and reserve components (Hosek, Kavanagh, and Miller, 2006; Klerman, Loughran, and Martin, 2006; Loughran, Klerman, and Martin, 2006). Although the data available in service personnel records do not allow a direct assessment of the relative costs and benefits accumulated by individual members, the overall pattern of results suggests that, for the majority of deployed service members,

the concrete benefits of deployment may compensate for the emotional costs.

The moderating analyses described in this section are consistent with this idea. If the effects of deployment on marriage are driven mostly by the income and career implications of deployment, then these effects should be greatest for couples with the most to gain. Indeed, these analyses suggest that the marriages of younger couples and couples with children benefit more from deployment than those of older couples and couples without children. Similarly, married male service members, over 90 percent of whom leave behind a spouse that they need to support when they are deployed, benefit more from deployment than married female service members, nearly 50 percent of whom are married to other service members, who presumably are less in need of support.

It may be that, for military marriages, deployments are a normative stressor, a challenge that is consistent with both spouses' expectations for themselves and for the marriage. The effects of deployment might therefore be compared with the effects of the transition to parenthood. Like deployments for military couples, the transition to parenthood is a life-altering event that couples perceive as meaningful and important (e.g., Cowan and Cowan, 1992). The arrival of the new child is indeed stressful, but spouses are prepared for the stress and are often surrounded by family and community who support them in managing the increased demands. As a result, although the transition to parenthood has been associated with declines in marital satisfaction, it is also associated with lower risk of marital dissolution (Karney and Bradbury, 1995). Examining the parallels between the transition to parenthood and the experience of deployment for military families would require research that assesses the expectations of military couples prior to deployment and then examines how those expectations account for marital outcomes postdeployment. It may be that spouses who expect deployment to be stressful and are prepared for that stress manage better than those whose expectations are unrealistic.

If time spent deployed actually reduces risk of marital dissolution, then how is it that so many people believe so strongly that deployments harm military marriages? There are several possible answers to

this question. First, there may be hidden costs to deployments that are highly salient to military families but that are not addressed by the data examined here. Most notably, to extend the analogy between deployments and the transition to parenthood, deployments may harm marital satisfaction even as they reduce risk of marital dissolution. The data examined here do not address processes within marriages at all, but it is hard to imagine that the quality of military marriages is not greatly affected by deployments. Recent evidence also suggests that deployments have costs for the children of deployed parents (e.g., Ender, 2006; Huebner and Mancini, 2005; Lyle, 2006), and these costs are also not assessed by the data examined here. For military couples, these costs may be highly salient, or more salient than the structural benefits that keep military marriages intact. Second, deployment may have long-term costs that emerge years after couples are reunited, or after service members have separated from the military. The current data provide no access to these outcomes, but couples may be aware of them. Third, during times of heightened military activity, there may be a bias in couples and observers to blame marital dissolutions on deployments, even if those dissolutions are not directly attributable to deployment itself. Finally, deployment may have different effects on marital dissolution among military couples who were married prior to the onset of military operations in Afghanistan and Iraq. To control for differences in marital duration, these analyses examined only those couples who married after FY2002, the period for which detailed deployment data were available. All these couples knew that the deployments in Afghanistan and Iraq were under way, and they may have expected and prepared for them. In contrast, couples who were married prior to the terrorist attacks of September 2001 may not have expected the increased demands they have faced since that date. These couples, omitted from the analyses described here, may be the ones most negatively affected by deployments.

CHAPTER SEVEN

Conclusions and Future Directions for Research and Policy

In contrast to the days when service members were discouraged from being married, today's military has been called a military of families (Hosek et al., 2002). Not only are most service members currently married, but those who are unmarried enter marriage at higher rates than comparable unmarried civilians (Cadigan, 2000), suggesting that the modern military offers incentives that actually encourage marriage (Zax and Flueck, 2003). In light of the increasing relevance of marriage for the lives of service members, there is now a growing consensus that supporting these relationships is in the best interests of the military. Although the implications of marriage for the performance of service members remains unclear, the effect of marriage on retention decisions is well established: Those whose family lives are more satisfying are more likely to remain in the service than those whose family lives are less satisfying (e.g., Kelley et al., 2001; Vernez and Zellman, 1987). Segal (1989) explained the implications of these findings very clearly when she wrote:

> In general, the more the armed forces adapt to family needs, the greater the commitment of both servicemembers and their families to the institution. To the extent that the military views the family as an outside influence with which it competes, the more resistant servicemembers and their families will be to the

> demands of the organization. *To the extent that the military works to incorporate the family and adapt to it, the result will be organizational change that preserve the institutional nature of the military organization*. (Segal, 1989, p. 30, italics added)

Supporting military marriages effectively requires a clear and accurate understanding of how military marriages succeed and fail, and in particular of how military couples respond to and cope with the stress and demands of military service. One lesson of the analyses described in this monograph is that our current understanding of military marriage is quite limited. Several recurring themes in the monograph support this point. First, the conventional wisdom about how deployments affect military marriage turns out to be wrong. Whereas media reports and military leaders themselves describe deployments as harming marriages, our analyses suggest, based on ten years of data from the entire population of the military, that deployments generally reduce risk of marital dissolution. Second, the assembled empirical research on military marriage has yet to address the crucial question of how military couples interact with each other and adapt to the stress of military service. The dearth of systematic research may help to explain the gap between what conventional wisdom predicts and what the data examined here have revealed.

This final chapter summarizes and discusses the results of the new empirical analyses presented here, offers concrete recommendations for research to refine our current understanding of military marriage, and then discusses how what is known about military marriage can be used to inform policies and programs affecting military families.

Summary

The new analyses described in this monograph drew upon service personnel records to evaluate how the unusually high demands upon the military in recent years may have affected military marriages. Several results are worthy of note:

Rates of entering marriage and rates of ending marriage tend to change in parallel over time, such that rates of marital dissolution tend to rise as rates of entry into marriage are rising. Discussions of how the recent elevated levels of deployment are affecting military marriages tend to focus on marital dissolution, i.e., the extent to which military couples are ending their marriages. The current analyses, however, reveal that trends in marital dissolution over time run parallel to trends in entering marriage over time, and this holds true across services and components of the military. Explaining trends over time therefore requires explanations that account for changes in rates of both transitions.

Trends in rates of marriage and marital dissolution began to change in FY2001, prior to the onset of military operations in Afghanistan and Iraq. When the terrorist attacks of September 2001 occurred, FY2001 was already over. Yet, as most of the figures presented in this monograph make clear, trends in marriage and marital dissolution throughout the military had already begun to change prior to the attacks. For most services and across components, rates of marriage and marital dissolution were relatively high in FY1996, declined through FY2000, begin to rise in FY2001, and have since returned to the levels observed in FY1996. Thus, although it appears that rates of marital dissolution have indeed increased since the onset of military operations in Afghanistan and Iraq, the fact that the increases began prior to those operations, and the fact that current rates are comparable to rates observed during periods of much less military activity, argue against the current pace of deployments as the direct cause of the increase. Rather, these data are more consistent with a selection effect, i.e., the idea that more members of the military have been getting married, including more vulnerable couples who are at increased risk for subsequent marital dissolution.

Trends in rates of marriage and marital dissolution are comparable across services and components. The trends described in the figures presented in this monograph do reveal differences among the services in how rates of marriage and marital dissolution have changed over time. Yet the similarities are striking. In almost every service and across components, rates of marriage and marital dissolution peaked sharply in FY1999, and plunged just as sharply in FY2000. Until an explanation

for this observation can be found, interpretations of this pattern should be held with caution. Even aside from this pattern, however, most of the services seem to have experienced a general decline in rates of marriage between FY1996 and FY2000 and a general and mostly gradual increase since then. Such similarity is noteworthy because the demands on the different services, especially in the last four years, have been quite different. The fact that changes in rates of marriage and marital dissolution are similar across services that have faced such different demands suggests that factors other than demands may account for these trends. This finding is also consistent with a selection effect.

Women's marriages are at greater risk than men's marriages, and the marriages of enlisted members are at greater risk than the marriages of officers. Across the services and components, there are few differences between women and men and between enlisted members and officers with respect to rates of entering marriage. However, there are notable differences among these groups in rates of marital dissolution. Whereas media reports on the effect of deployments on military marriages tend to focus on the marriages of enlisted male service members, our analyses suggest that the marriages of enlisted female service members are several times more likely to end, and this has been true throughout the past ten years. Our analyses examined whether higher rates of dual-military marriage among female service members account for this gender difference, but we found little support for this idea in the data. Thus, the unique challenges faced by the marriages of female service members remains an overlooked question.

The experience of deployment during marriage generally reduces subsequent risk of experiencing marital dissolution. Current discussions of the effects of deployment strongly assume that deployments harm the marriages of those who are deployed and that longer deployments contribute to a greater risk of subsequent marital dissolution. Our analyses offer scant support for this assumption. On the contrary, with only one exception (the active Air Force), being deployed while married had either no effect on subsequent risk of marital dissolution or a significantly beneficial effect, such that the longer a married service member was deployed, the lower the subsequent risk of ending the marriage. Although some may find these results counterintuitive, in fact they

are consistent with other recent findings that document the benefits of deployment (e.g., increased income) for military families. There may be other negative consequences of deployment that are not reflected in service personnel records (e.g., declines in marital satisfaction, mental health, child well-being, or long-term outcomes), but the short-term consequences of deployment for military marriages do not seem to be what many observers expect.

General Discussion

Chapter One described two possible hypotheses to explain why rates of marital dissolution in the military might be rising. The stress hypothesis suggests that the demands of military service harm military marriages, leading to the end of marriages that would otherwise have endured. In general, our analyses fail to support this hypothesis. On the contrary, the results highlight the resilience of military marriages. Despite the extraordinary stresses on the military since the onset of the current military operations, including lengthy deployments and high rates of exposure to combat, military marriages today are dissolving no more frequently than they did a decade ago, when the demands on the military were measurable weaker. Moreover, the experience of deployment is directly associated with a reduced risk of subsequent marital dissolution. These results suggest that most military marriages have adapted to the increased demands of recent years, possibly helped by policies designed to support military families.

In contrast, the selection hypothesis suggests that, in the face of impending deployments, some service members enter marriages that they might otherwise not have entered, and these marriages are at greater risk of subsequent dissolution regardless of the stress they experience. This hypothesis predicts that rates of marital dissolution in the military should track rates of entering marriage: When more service members are entering marriage, more also dissolve their marriages. This is exactly the pattern observed in these data. The selection hypothesis also gains support from the possibility that changes in rates of marriage and marital dissolution across time may be more strongly

associated with changes in military policies governing compensation and benefits than with changes in demands on the military. For example, the period addressed by these data witnessed several important changes within the military, including the troop reductions and base closures of the late 1990s, increases in compensation, and loosening of eligibility requirements. Within the context of a changing national economy during the same period, the appeal of the military relative to civilian employment may have also changed during this time. Each of these changes may have affected the kinds of individuals entering the military—more specifically, the way service members evaluate the relative costs and benefits of marriage. The selection hypothesis suggests that a detailed analysis of service members' decisions to enter marriage, and how these decisions are affected by specific changes in military policies and benefits, may illuminate marital dissolution within the military as much as further examination of the effects of stress would.

Those who interpret these results should keep in mind the strengths and weaknesses of the analyses described in this monograph. The primary strength of the analyses is that they describe, not a sampling of service members, but rather the entire population of military personnel over the past ten years. Moreover, the analyses include data from the active and reserve components including the National Guard, providing unique insight into trends that cut across all segments of the military and trends that distinguish among groups. Finally, the analyses of the effects of deployment took advantage of the longitudinal nature of service personnel records to examine how deployments affect an individual's risk of marital dissolution, a substantial advance over prior research on this issue.

Yet, despite these strengths, our analyses were nevertheless limited in ways that constrain interpretations of their results. One significant limitation of this work is that service records contain only a limited number of variables relevant to understanding military marriages. Although analyses of the available data provided little evidence for stress effects, there may be substantial costs to deployments that were unobserved here. A second noteworthy limitation is the fact that service personnel records contain errors that we could not correct. As others have observed, the quality of a data set tends to increase in

direct proportion to the number of people interested in using the data. Until very recently, few people have been interested in examining military marriages through these records, and perhaps as a consequence there has been little consistency in how marital transitions have been recorded across the services and components. DMDC knows of several errors, but there exists no catalogue of these errors that researchers drawing upon these records might refer to and add to as new errors are discovered. The result is that conclusions drawn from the data should be treated as suggestive rather than definitive.

Priorities for Future Research on Military Marriages

Within the gap between prediction and observation lies a research agenda. Our analyses indicate that commonly held theories of military marriage are incomplete and that the variables most crucial for understanding how military marriages respond to stress may have yet to be studied. In particular, many observers appear to have focused on the direct effects of stress on couples, overlooking the effects of supportive programs and institutions that may buffer the effects of stress. The integrative framework described in Chapter Two offers a broad context for understanding these effects, and all the paths suggested by that framework are worthy of further examination. In this section, we describe a selection of relevant issues that deserve to be priorities for future research.

Examine how military couples interact with each other and adapt to stress. Analyses of service records illuminate transitions into and out of marriage. Survey data offer snapshots of individuals' perceptions. Understanding how military couples function, however, requires research that moves beyond administrative and survey data to examine military couples directly. Research on civilian marriage acknowledged this point several decades ago, as pioneering researchers like Raush (e.g., Raush et al., 1974), Gottman (e.g., 1979), and Jacobson (e.g., Jacobson and Margolin, 1979) began to develop techniques for observing married couples as they negotiate areas of conflict. These techniques incorporated two methodological advances. First, they involved gather-

ing data from both members of a couple. Second, they involved direct observations of marital interactions to identify the specific behaviors that characterize more- or less-adaptive ways of interacting. Research that follows in the tradition set down by these scholars provides the foundation of all currently available marital education programs and curricula, yet this work has never been conducted within samples of military marriages. The lack of data on marital processes within military marriages has limited understanding of these couples in at least two ways. First, although it is widely assumed that the demands of military service inhibit effective interactions between military spouses, there is no evidence to support this assumption, and indeed it may be flawed or incomplete. Second, to the extent that there are more- or less-adaptive ways for military couples to address the stress in their lives, there are no empirical descriptions of what these ways might be, and so little guidance for developing programs to assist military couples. Collecting observational data from couples is time-consuming and costly, both for the researchers and for the research participants. Yet, before the military invests in programs to promote effective adaptation in military marriages, a research base that addresses adaptive processes directly seems necessary.

Conduct longitudinal research. Many of the central unanswered questions about military marriages are inherently longitudinal, i.e., they address issues of stability and change over time. For example, does the experience of deployment change the marriage, or are the outcomes of military marriages determined by factors in place prior to deployment? Are couples with realistic expectations of the demands of military service able to cope more effectively when those demands arise? To the extent that returning from a deployment requires an adjustment within the family, how long does that adjustment process generally last? Are there consequences to deployment that emerge only after service members separate from the military? Addressing these sorts of questions requires research that collects multiple assessments from the same military spouses over time, i.e., panel or longitudinal data. Without such data, even the most exhaustive survey is incapable of teasing apart the effects of military service from the effects of characteristics (e.g., personality, level of education, personal history) that were present prior to

military service. Yet to date, there have been no longitudinal studies of military families. Administrative data can be used to create longitudinal data sets, as we did for this monograph, but the variables contained in administrative data are very limited. Advancing our understanding of how military service affects military families requires research that, at minimum, assesses these families at the outset of their service, and then again at some point after their service has ended.

Expand the full range of relevant outcomes. To date, research on military marriage has focused almost exclusively on predictors of divorce and marital dissolution. The research reviewed in this monograph suggests that this focus is too narrow. For example, the results described in Chapter Four indicate that trends in marital dissolution map onto contemporaneous trends in entering marriage. The decision to get married is therefore a reasonable outcome to explain in itself because it might offer insights into the eventual outcomes of service members' marriages. Similarly, research on marriage and retention decisions suggest that it is the quality of the marriage, more than marital status, that accounts for the effects of marriage on retention (Vernez and Zellman, 1987). Research on civilian marriage has confirmed this point over and over, showing that spouses' evaluations of their relationship are strongly associated with job performance (Forthofer et al., 1996) and health (Kiecolt-Glaser and Newton, 2001). Research on military marriage would be well served by taking this research into account and addressing the quality of military marriages directly.

Address the marriages of female service members. One of the largest and most reliable effects revealed in this monograph is also one that has received a minimum of attention: Rates of marital dissolution are several times higher for female service members than for male service members, and this difference holds true across time, services, and ranks. Although women represent a smaller proportion of the military than men, these rates nevertheless represent a significant number of broken families. Awareness of the disproportionate costs of military service for women may in fact be an issue that inhibits from women from serving. Supporting the marriages of female service members requires research that identifies the unique challenges that their marriages face. It may be that female service members are feeling the particular pinch

of restricted gender roles that cannot be reconciled with demands of military life. However, it is also possible that the military selects for women whose marriages would be at increased risk regardless of their service. In this monograph, we examined a third possibility, the idea that women may be at greater risk because of their higher rates of marrying other service members. Although we did not find support for that possibility in these data, the challenges of dual-military marriages are another topic worthy of further study (Janofsky, 1989). In general, it seems likely that supporting the marriages of female service members effectively will require programs tailored to their unique needs. Basic research on what those needs may be should inform the development of those programs.

Relate changes in military marriage to changes in policy. The fact that similar trends in marriage and marital dissolution are observed across services and components suggests that family transitions are affected by forces that affect the entire military at the same time. The fact that many of the most drastic changes in rates of marriage and marital dissolution took place prior to the onset of military operations in Afghanistan and Iraq indicates that more than the anticipation of deployments was at work. Yet, by themselves, analyses of the service records examined in Chapter Two provide no sense of the broader forces that affect rates of transitions into and out of marriage. A useful supplement to the empirical analyses described here would be a history of the social and institutional changes that have affected military couples over the same period. One element of such a history should be a review of changes in military policies that affect families, such as recruitment strategies, rates of compensation, benefits, and support programs. An additional element should be a review of economic and social changes in the country more generally, to illuminate the alternatives that were available to those who chose to enter the military during this time. By mapping changes in rates of marriage and marital dissolution within the military onto changes in family policies and the broader economy, this contextual analysis could help identify the sources of the trends described in this monograph, and thereby highlight directions for future policies designed to shape these trends in desired ways.

Develop ways to compare civilian and military marriages. To help evaluate research on military marriages, a common request is to compare results obtained with military samples to results obtained with comparable civilian samples. Fulfilling such requests is not straightforward, however, because there is no consensus among researchers about the dimensions on which military and civilian samples might be comparable. For example, Cadigan (2000) addressed this challenge by comparing men in the military to same-age men in the civilian population who were high school graduates and were employed full time. This seems a promising beginning, although it is not hard to identify several likely differences between these two groups (e.g., prevalence of substance abuse, financial stability, access to social support) that could account for differences in their transitions into and out of marriage. A stronger approach would be to draw upon the known demographics of the military to create civilian comparison groups matched on multiple dimensions (e.g., level of education, age at marriage, household income, race/ethnicity). Separate comparison samples could be developed for analyses of each service, given the established demographic differences between the services. In general, comparisons between military and civilian populations remain interesting and potentially informative for military policy. The best practices for conducting these comparisons are worthy of direct attention.

Exploit existing data sets. As much as several broad trends in marriage and marital dissolution could be observed across services of the military, specific patterns and trends also varied across ranks, services, and components. Moreover, the means reported in these analyses mask likely heterogeneity across variables not examined here, such as geographical location, job code within the military, and type of deployment. The variables to examine these potential sources of heterogeneity lie waiting in existing data sets, including the one assembled for this monograph, and these data sets are worth exploiting for several reasons. First, a more refined picture of vulnerability among military families will assist the military in allocating limited resources toward those families most likely to benefit from support. For example, unpublished analyses conducted by the Air Force (described in Chapter Three) showed substantial variation in divorce rates across Air Force

bases, and found that this variation is associated with variation in the local divorce rate for the regions in which the bases are situated. A better understanding of the source of geographic variability in family transitions could alert base commanders across the services to the potential needs of military families within their commands. Mining the geographic data in existing service records would be an important step toward this goal. Second, analyses of existing data sets are a cost-effective way addressing new questions without waiting for and paying for the collection of new data. One especially promising direction in this regard is to explore linking the longitudinal administrative data assembled here with the cross-sectional surveys administered periodically by DMDC over the past several years. Linking data sets in this way raises issues of confidentiality, but there are ways for those issues to be addressed, including asking DMDC to conduct all the analyses. Because the cross-sectional surveys contain a broader range of variables than the administrative data, the linked data sets could be used to examine the long-term implications of these variables for family and other transitions reflected in the administrative data. The results of these secondary data analyses could then be used to inform new data collection that builds upon what has already been done.

Implications for Supporting Military Marriages

Given that this monograph has highlighted the limitations of existing research on military marriages, any specific recommendations for supporting these marriages must be considered tentative. Keeping this caveat in mind, the analyses described here and the accumulated research to date nevertheless have several implications for developing policies and programs to support military marriages.

Recruitment and eligibility policies are likely to affect rates of marriage and marital dissolution. A recurring theme in our analyses is that selection effects may be powerful explanations for observed trends in marriage and marital dissolution in the military. Changes in the ways that the military recruits members, or changes in the criteria for who is eligible to serve, may therefore have implications for the sorts

of people marrying within the military, the timing of those marriages, and their likelihood of ending in marital dissolution. For example, to the extent that the military loosens the eligibility requirements of service members, more vulnerable individuals are likely to enlist. To the extent that these individuals marry at the same rate as the individuals who were eligible under the more stringent criteria, the influx of more vulnerable couples should result in subsequent increases in rates of marital dissolution, even in the absence of other changes in policies or demands. Thus, the desire to increase accessions may have the unintended consequence of increasing rates of marital disruption in the military, and this is a consequence worth taking into account as changes in recruitment and eligibility are being considered.

Programs and policies that minimize or delay entry into marriage are likely to reduce rates of marital dissolution as well. To the extent that rising rates of marriage reflect higher numbers of vulnerable couples choosing to get married, the decision to get married is a potential target for interventions designed to reduce marital dissolution and divorce. As noted in Chapter One, the Army has already taken steps in this direction, administering the Premarital Interpersonal Choices and Knowledge program (also known as the P.I.C.K. a Partner program, or "How to Avoid Marrying a Jerk") to unmarried service members. The goal of this program is to offer participants guidelines for choosing partners and deciding when to get married, in hopes of inducing service members in relationships with high-risk partners to delay marriage or to avoid it altogether. The success of this program and others that target unmarried individuals depends on whether the service members at highest risk are in fact receiving the program and whether the program actually has an effect on the decision to get married. With respect to the P.I.C.K. program, neither of these questions has yet been answered. In theory, however, programs that promote more effective decisionmaking among unmarried couples should result in greater stability among the couples that do go on to get married.

The marriages of male and female service members may need different types of support. A consistent finding throughout our analyses is that female service members dissolve their marriages at higher rates than male service members do. One source of this difference may be another

selection effect—the military may select for women whose marriages would be at greater risk regardless of their military service. Yet it is also easy to imagine that the challenges of maintaining a healthy marriage are very different, and possibly greater, for female than for male service members. For civilian wives, maintaining their families and supporting their husbands is consistent with the social roles ascribed to women in society at large. Moreover, the support programs available to military families, especially during deployments, may be tailored specifically to wives and their concerns. In contrast, civilian husbands have no well-defined social role. Because they represent a far smaller proportion of military spouses, they may not have access to the same level of support when their spouses are deployed. A first step toward reducing the disproportionately high levels of dissolution in the marriages of female service members is to examine the needs of these marriages directly and then to tailor programs specifically toward addressing those needs.

Programs directed at military marriages require rigorous evaluation. If the limited resources available for supporting military marriages are to be allocated efficiently, the military needs reliable data on which programs are mostly likely to be effective (Segal, 1989). To date, there are no data on whether programs designed to support and strengthen military marriages actually have the desired effects. One reason for the lack of evaluation in this area is that rigorous evaluations are costly and difficult to do. Stanley and his colleagues (Stanley et al., 2005) have published one report taking a standard approach, showing that, among Army couples who volunteered to participate in a set of two daylong marital education workshops, self-reported descriptions of the marriage were more positive at the end of the program than at the beginning. This is a promising result, but, because couples that volunteer to participate are likely to be motivated to report positive results, it falls short of demonstrating that the program led to lasting changes in the marriage. A rigorous demonstration requires random assignment of couples to conditions that receive or do not receive the program, longitudinal follow-ups to examine whether program effects persist over meaningful lengths of time, procedures to minimize attrition, and preferably tools for assessing program effects that do not rely exclusively on self-reports.

These are precisely the criteria currently being met by federally sponsored research to examine whether marital education brings about positive changes in low-income marriages (e.g., the Supporting Healthy Marriages project sponsored by the Administration on Children and Families). Before investing heavily in any one approach toward supporting military marriages, similar data should be consulted, or, where not available, generated. The alternative is to run the risk of allocating limited resources toward programs that have little or no effects.

Programs that improve the conditions of service members may improve their marriages indirectly. The integrative framework described in Chapter Two suggests that the success or failure of military marriages is linked to a broad range of variables that are relatively independent of the marriage itself. For example, as the research reviewed in Chapter Three indicates, one consistent predictor of outcomes in military marriages is the mental health of the service member, especially in response to experiences during deployments. It follows that the availability and quality of mental health services, to the extent that they increase the psychological and emotional well-being of service members, will have indirect benefits for their marriages as well. Although there is less research supporting other predictors of marital outcomes within the military, it seems likely that other strategies that improve the lives of military families (e.g., spouse employment programs, support for obtaining affordable housing, child and health care services) also have indirect benefits for marriages via similar paths of influence. The fact that many of these sorts of programs already exist may account for the relative resilience of military marriages observed in the analyses described in Chapter Six. The broad implication of the themes discussed in this monograph is that such programs should continue to be supported and refined.

Reserving programs and benefits for married couples may have the unintended effect of encouraging vulnerable couples to marry. It is hard to argue with efforts to improve the lives of military couples. Yet, to the extent that valuable benefits are reserved for married couples only, the existence of these benefits may induce couples to marry who might otherwise have postponed marriage or never married at all. In this way, efforts to support marriages in the military could have the paradoxical

effect of leading to higher rates of marital dissolution. The solution to this dilemma is not to reduce the support offered to military couples but rather to introduce some flexibility in who is eligible for family support. The more that a broad array of family structures (e.g., cohabitation, single parenting) are recognized, the less any couples will be compelled to marry inappropriately to obtain benefits.

APPENDIX

Marriage and Marital Dissolution Tables

The figures presented in Chapter Four describe trends in marriage and marital dissolution for different segments of the military. For those interested in knowing the rates of these indicators more precisely, this appendix provides those rates for FY1996, FY2000, and FY2005. In addition, the tables that follow report the raw change in these indicators (computed as a difference score) between FY1996 and FY2005 (i.e., change over ten years) and between FY2000 and FY2005 (i.e., change over five years). In general, comparing the two change scores suggests that changes over the past five years appear larger than changes over the past ten years.

Table A.1
Percentage Married in the Active Military

Service	Men					Women				
	1996	2000	2005	Change 2000–2005	Change 1996–2005	1996	2000	2005	Change 2000–2005	Change 1996–2005
Enlisted										
Army	58.6	52.9	49.0	–3.9	–9.6	49.1	44.1	41.5	–2.6	–7.6
Navy	57.3	50.4	52.5	2.1	–4.8	40.9	33.1	37.7	4.6	–3.2
Air Force	67.6	63.8	57.8	–6.0	–9.8	54.0	48.5	48.7	0.2	–5.3
Marine Corps	44.4	40.8	41.4	0.6	–3.0	41.6	39.6	40.0	0.4	–1.6
Coast Guard	65.1	57.8	54.3	–3.5	–10.8	44.3	40.4	40.6	0.2	–3.7
Total	58.7	53.1	51.0	–2.1	–7.7	48.1	42.5	42.8	0.3	–5.3
Officers										
Army	76.7	75.9	71.9	–4.0	–4.8	54.5	55.1	50.4	–4.7	–4.1
Navy	74.1	69.3	70.1	0.8	–4.0	51.5	48.2	46.9	–1.3	–4.6
Air Force	78.7	77.5	74.3	–3.2	–4.4	57.0	56.2	54.9	–1.3	–2.1
Marine Corps	74.4	72.2	72.8	0.6	–1.6	49.8	44.2	43.4	–0.8	–6.4
Coast Guard	79.9	78.9	79.3	0.4	–0.6	49.1	45.9	46.9	1.0	–2.2
Total	76.6	74.6	72.5	–2.1	–4.1	54.5	53.3	51.0	–2.3	–3.5

Table A.2
Percentage Married upon Accession in the Active Military

	Men					Women				
Service	**1996**	**2000**	**2005**	**Change 2000–2005**	**Change 1996–2005**	**1996**	**2000**	**2005**	**Change 2000–2005**	**Change 1996–2005**
					Enlisted					
Army	17.0	14.2	16.2	2.0	–0.8	18.9	16.5	19.7	3.2	0.8
Navy	6.4	4.9	5.6	0.7	–0.8	5.6	4.7	5.9	1.2	0.3
Air Force	12.8	10.0	9.7	–0.3	–3.1	13.2	10.1	10.7	0.6	–2.5
Marine Corps	5.4	3.5	2.9	–0.6	–2.5	7.2	6.2	4.4	–1.8	–2.8
Coast Guard	12.4	10.8	12.9	2.1	0.5	11.7	8.2	15.2	7.0	3.5
Total	11.2	9.3	10.0	0.7	–1.2	13.6	11.4	13.2	1.8	–0.4
					Officers					
Army	22.7	14.8	21.1	6.3	–1.6	23.0	14.6	21.4	6.8	–1.6
Navy	23.0	12.0	11.1	–0.9	–11.9	20.5	10.5	10.3	–0.2	–10.2
Air Force	48.8	24.6	18.2	–6.4	–30.6	34.8	24.8	23.9	–0.9	–10.9
Marine Corps	16.8	13.4	13.4	0.0	–3.4	8.9	12.8	12.4	–0.4	3.5
Coast Guard	6.6	19.5	11.8	–7.7	5.2	11.7	1.6	7.6	6.0	–4.1
Total	24.9	16.0	17.3	1.3	–7.6	25.3	15.7	19.3	3.6	–6.0

Table A.3
Rates of Entering First Marriage in the Active Military

Service	Men					Women				
	1996	2000	2005	Change 2000–2005	Change 1996–2005	1996	2000	2005	Change 2000–2005	Change 1996–2005
					Enlisted					
Army	11.7	7.4	14.3	6.9	2.6	13.2	10.0	15.1	5.1	1.9
Navy	12.7	5.5	14.7	9.2	2.0	13.9	6.8	13.7	6.9	–0.2
Air Force	13.5	9.8	12.9	3.1	–0.6	17.1	12.5	15.6	3.1	–1.5
Marine Corps	12.9	9.6	14.1	4.5	1.2	20.4	15.8	19.9	4.1	–0.5
Coast Guard	11.5	7.1	11.2	4.1	–0.3	12.0	8.8	12.2	3.4	0.2
Total	12.5	7.6	14.0	6.4	1.5	14.8	9.9	15.0	5.1	0.2
					Officers					
Army	16.7	12.2	21.2	9.0	4.5	12.0	9.0	12.8	3.8	0.8
Navy	14.5	8.9	18.4	9.5	3.9	10.2	5.2	10.8	5.6	0.6
Air Force	15.4	10.8	16.4	5.6	1.0	11.8	8.4	11.7	3.3	–0.1
Marine Corps	15.3	10.0	13.9	3.9	–1.4	9.6	6.9	8.8	1.9	–0.8
Coast Guard	15.0	9.9	12.2	2.3	–2.8	10.3	4.3	10.9	6.6	0.6
Total	15.6	10.5	18.3	7.8	2.7	11.3	7.6	11.7	4.1	0.4

Table A.4
Rates of Marital Dissolution in the Active Military

Service	Men					Women				
	1996	2000	2005	Change 2000–2005	Change 1996–2005	1996	2000	2005	Change 2000–2005	Change 1996–2005
					Enlisted					
Army	3.0	1.6	2.9	1.3	–0.1	8.5	4.6	8.2	3.6	–0.3
Navy	2.8	4.9	2.7	–2.2	–0.1	6.2	9.2	6.3	–2.9	0.1
Air Force	3.2	2.3	2.9	0.6	–0.3	6.7	5.4	7.0	1.6	0.3
Marine Corps	2.9	2.4	2.9	0.5	0.0	7.7	5.4	8.3	2.9	0.6
Coast Guard	2.7	2.0	2.7	0.7	0.0	5.2	5.3	7.7	2.4	2.5
Total	3.0	2.7	2.8	0.1	–0.2	7.3	5.8	7.3	1.5	0.0
					Officers					
Army	1.6	1.1	1.8	0.7	0.2	4.1	2.6	4.4	1.8	0.3
Navy	1.3	1.8	1.8	0.0	0.5	3.3	3.6	3.4	–0.2	0.1
Air Force	1.2	0.8	1.1	0.3	–0.1	2.7	1.8	3.2	1.4	0.5
Marine Corps	1.5	1.2	1.5	0.3	0.0	5.2	3.3	4.3	1.0	–0.9
Coast Guard	1.2	0.9	1.2	0.3	0.0	5.5	2.7	1.7	–1.0	–3.8
Total	1.4	1.2	1.5	0.3	0.1	3.4	2.5	3.6	1.1	0.2

Table A.5
Percentage Married in the Military Reserves

Service	Men					Women				
	1996	2000	2005	Change 2000–2005	Change 1996–2005	1996	2000	2005	Change 2000–2005	Change 1996–2005
Enlisted										
Army	44.0	45.3	44.2	–1.1	0.2	29.8	30.0	30.8	0.8	1.0
Navy	61.5	63.4	61.0	–2.4	–0.5	41.2	51.6	44.7	–6.9	3.5
Air Force	67.8	66.8	60.3	–6.5	–7.5	50.2	48.9	41.6	–7.3	–8.6
Marine Corps	26.3	25.6	26.5	0.9	0.2	40.8	30.5	30.7	0.2	–10.1
Coast Guard	67.0	64.4	53.8	–10.6	–13.2	48.2	45.6	43.9	–1.7	–4.3
Total	50.1	50.9	48.1	–2.8	–2.0	35.8	37.8	35.9	–1.9	0.1
Officers										
Army	76.3	74.3	77.3	3.0	1.0	54.1	53.9	54.4	0.5	0.3
Navy	80.3	73.1	76.9	3.8	–3.4	52.1	61.1	60.5	–0.6	8.4
Air Force	81.3	80.2	79.4	–0.8	–1.9	63.2	64.2	65.2	1.0	2.0
Marine Corps	80.5	81.3	83.5	2.2	3.0	63.3	62.2	60.5	–1.7	–2.8
Coast Guard	86.1	80.6	79.3	–1.3	–6.8	62.2	60.2	61.5	1.3	–0.7
Total	78.5	75.6	78.0	2.4	–0.5	55.8	57.5	58.4	0.9	2.6

Table A.6
Rates of Entering First Marriage in the Military Reserves

	Men					Women				
Service	1996	2000	2005	Change 2000–2005	Change 1996–2005	1996	2000	2005	Change 2000–2005	Change 1996–2005
					Enlisted					
Army	6.5	4.4	7.3	2.9	0.8	4.8	3.6	5.8	2.2	1.0
Navy	7.9	3.7	14.7	11.0	6.8	7.2	3.1	9.4	6.3	2.2
Air Force	6.5	4.0	3.8	–0.2	–2.7	5.3	3.1	4.6	1.5	–0.7
Marine Corps	5.1	3.6	5.9	2.3	0.8	7.3	3.8	7.8	4.0	0.5
Coast Guard	5.6	4.1	5.4	1.3	–0.2	1.0	2.7	5.5	2.8	4.5
Total	6.5	4.1	7.6	3.5	1.1	5.3	3.4	6.3	2.9	1.0
					Officers					
Army	10.4	8.0	10.2	2.2	–0.2	5.5	4.6	6.0	1.4	0.5
Navy	11.6	36.2	27.0	–9.2	15.4	7.3	11.8	13.8	2.0	6.5
Air Force	7.2	4.8	6.1	1.3	–1.1	5.9	2.1	3.4	1.3	–2.5
Marine Corps	12.9	9.2	11.6	2.4	–1.3	1.5	0.0	3.9	3.9	2.4
Coast Guard	8.8	2.7	9.7	7.0	0.9	6.7	1.9	10.0	8.1	3.3
Total	10.4	16.0	14.6	–1.4	4.2	6.0	5.5	7.2	1.7	1.2

Table A.7
Rates of Marital Dissolution in the Military Reserves

	Men					Women				
Service	1996	2000	2005	Change 2000–2005	Change 1996–2005	1996	2000	2005	Change 2000–2005	Change 1996–2005
					Enlisted					
Army	3.2	1.9	2.8	0.9	–0.4	6.3	3.9	6.5	2.6	0.2
Navy	2.2	2.0	3.2	1.2	1.0	5.0	3.4	5.5	2.1	0.5
Air Force	2.2	1.4	1.4	0.0	–0.8	4.3	3.2	3.7	0.5	–0.6
Marine Corps	2.5	1.8	2.3	0.5	–0.2	9.3	5.9	6.2	0.3	–3.1
Coast Guard	1.1	0.9	1.7	0.8	0.6	3.3	1.2	4.5	3.3	1.2
Total	2.6	1.8	2.5	0.7	–0.1	5.6	3.6	5.6	2.0	0.0
					Officers					
Army	1.7	1.1	1.6	0.5	–0.1	3.1	2.2	3.1	0.9	0.0
Navy	1.6	1.3	6.4	5.1	4.8	3.7	1.6	6.8	5.2	3.1
Air Force	1.2	0.8	0.9	0.1	–0.3	2.5	1.6	1.6	0.0	–0.9
Marine Corps	1.7	1.1	1.4	0.3	–0.3	1.7	1.4	1.7	0.3	0.0
Coast Guard	1.1	0.9	0.5	–0.4	–0.6	0.0	1.8	3.3	1.5	3.3
Total	1.5	1.1	2.6	1.5	1.1	3.0	1.9	3.3	1.4	0.3

Table A.8
Percentage Married in the National Guard

Service	Men					Women				
	1996	2000	2005	Change 2000–2005	Change 1996–2005	1996	2000	2005	Change 2000–2005	Change 1996–2005
Enlisted										
Army	55.3	53.8	49.7	–4.1	–5.6	36.4	33.0	28.5	–4.5	–7.9
Air Force	66.6	65.4	58.2	–7.2	–8.4	48.2	45.2	42.2	–3.0	–6.0
Total	57.7	56.3	51.6	–4.7	–6.1	40.4	36.9	32.6	–4.3	–7.8
Officers										
Army	76.7	77.3	76.5	–0.8	–0.2	51.3	54.2	52.5	–1.7	1.2
Air Force	81.5	81.4	80.0	–1.4	–1.5	57.8	58.9	60.7	1.8	2.9
Total	77.8	78.3	77.4	–0.9	–0.4	53.4	55.9	55.5	–0.4	2.1

Table A.9
Rates of Entering First Marriage in the National Guard

	Men					Women				
Service	1996	2000	2005	Change 2000–2005	Change 1996–2005	1996	2000	2005	Change 2000–2005	Change 1996–2005
					Enlisted					
Army	6.5	4.9	7.1	2.2	0.6	5.0	3.5	4.9	1.4	–0.1
Air Force	7.0	4.9	5.0	0.1	–2.0	6.7	4.2	6.8	2.6	0.1
Total	6.5	4.9	6.8	1.9	0.3	5.4	3.7	5.3	1.6	–0.1
					Officers					
Army	10.2	7.8	10.3	2.5	0.1	6.6	4.8	5.8	1.0	–0.8
Air Force	11.0	6.8	9.3	2.5	–1.7	6.6	4.3	8.0	3.7	1.4
Total	10.3	7.6	10.1	2.5	–0.2	6.6	4.6	6.5	1.9	–0.1

Table A.10
Rates of Marital Dissolution in the National Guard

Service	Men					Women				
	1996	2000	2005	Change 2000–2005	Change 1996–2005	1996	2000	2005	Change 2000–2005	Change 1996–2005
					Enlisted					
Army	1.6	1.1	1.7	0.6	0.1	4.0	2.8	4.7	1.9	0.7
Air Force	1.9	1.6	1.5	–0.1	–0.4	4.7	3.5	3.4	–0.1	–1.3
Total	1.7	1.2	1.7	0.5	0.0	4.3	3.0	4.2	1.2	–0.1
					Officers					
Army	1.4	0.9	1.4	0.5	0.0	3.1	2.3	3.5	1.2	0.4
Air Force	1.3	0.8	1.0	0.2	–0.3	4.3	1.9	3.1	1.2	–1.2
Total	1.3	0.9	1.3	0.4	0.0	3.5	2.2	3.4	1.2	–0.1

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