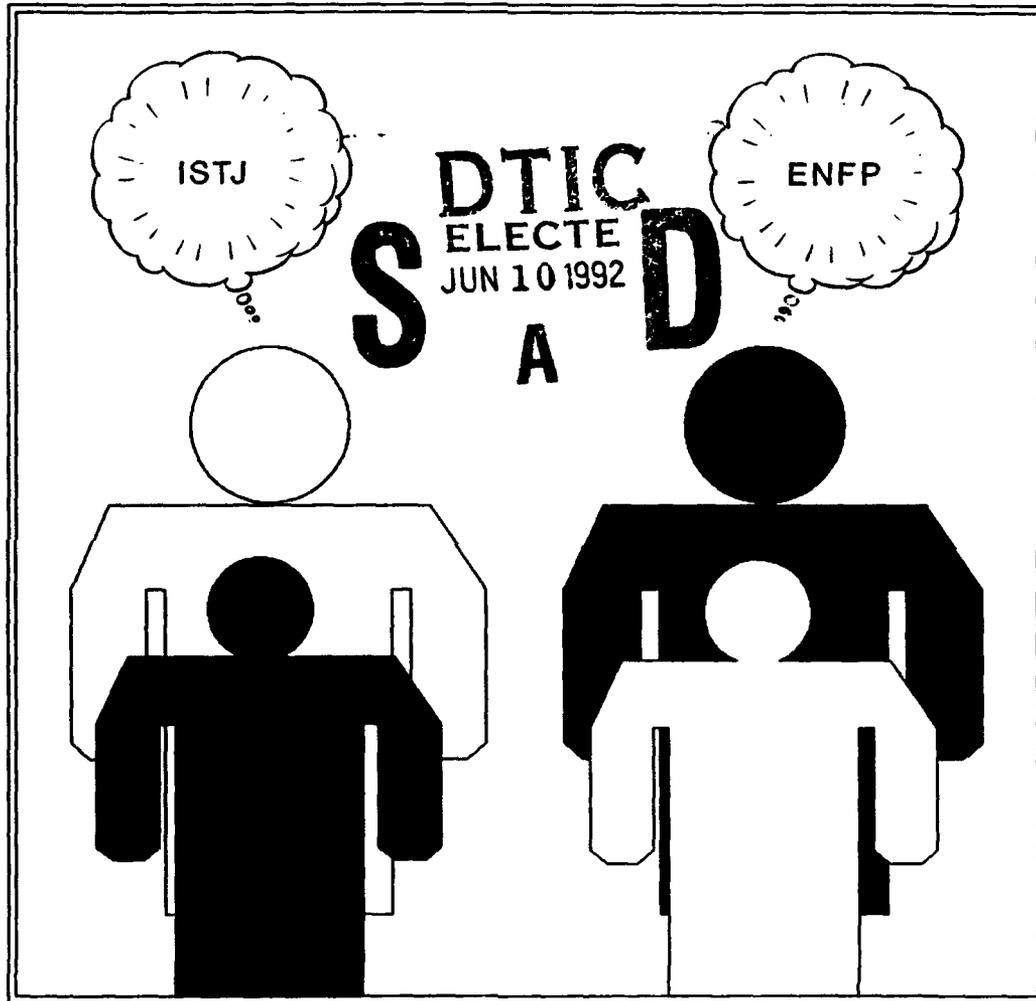


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A DESCRIPTION OF PSYCHOLOGICAL TYPE AT THE DEFENSE SYSTEMS MANAGEMENT COLLEGE



92-15161



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<p>This paper describes the psychological type as measured by the Myers-Briggs Type Indicator of a representative sample of more than 2,800 students who have attended the Defense Systems Management College (DSMC) since 1985. This study addressed the contributions and potential pitfalls that personnel with each Myers-Briggs Type bring to an organization and implications for leaders who must work in a possibly changing work force.</p> <p>This descriptive analysis may enable all who work in the defense acquisition environment to understand their co-workers better and, in this understanding, to enhance the overall acquisition process.</p>			
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Abstract

This paper describes the psychological type as measured by the Myers-Briggs Type Indicator of a representative sample of more than 2,800 students who have attended the Defense Systems Management College (DSMC) since 1985. This study addressed the contributions and potential pitfalls that personnel with each Myers-Briggs Type bring to an organization and implications for leaders who must work in a possibly changing work force.

This descriptive analysis may enable all who work in the defense acquisition environment to understand their coworkers better and, in this understanding, to enhance the overall acquisition process.

The Defense Systems Management College (DSMC) Catalog, states the College was created to provide "acquisition education, research, information dissemination, and oversight of the total Department of Defense acquisition education program." The Catalog further states that DSMC is "committed to ensuring that members of our military services and associated civil servants in the defense acquisition business have the necessary expertise to manage defense systems effectively," Defense Systems Management College (1991, p.5). To meet this goal the Department of Managerial Development has since 1983 been administering the Myers-Briggs Type Indicator (MBTI) to all students who have attended the Program Management Course. The MBTI was administered to provide these students with a way of understanding individual differences and utilizing this knowledge to better accomplish their mission. This paper describes the psychological type of a representative sample of more than 2,800 students who have attended DSMC since 1985. This descriptive analysis may enable all who work in the defense acquisition environment to better understand their contemporaries.

Program Management Course

The Program Management Course (PMC) is a 20-week professional education for mid-career military and civilian participants. Its focus is on teaching effective defense systems acquisition management. The DSMC Catalog (Defense Systems Management College, 1991, p.45) states: "Enrollment

is targeted at promising candidates for senior positions in program management later in their career."

Subjects

Participants in this study consist of 2,818 military officers, civil servants and defense contractors who attended the Program Management Course between 1985 and 1991. This sample consisted of 804 students who were affiliated with the U.S. Army, 786 with the U.S. Navy, 854 with the U.S. Air Force, 123 with the U.S. Marines, 169 from defense-related industry and 12 from the U.S. Coast Guard. Due to the small number of Coast Guard students, breakdowns for that group were not performed.

All students were given the Myers-Briggs Type Indicator Form G on the first or second day of the PMC. All students were administered the MBTI at approximately the same time.

Instrumentation

The MBTI is described by Buros Institute of Mental Measurements (1985, p.1030) as "probably the most widely used instrument for non-psychiatric populations in the areas of clinical, counseling, and personality testing." In describing the MBTI Form G, Buros Institute of Mental Measurements (1985, p.1031) states that Form G "is now the standard form." It consists of 126 items; however, only the first 95 items are used in deriving the subject's score. The other 31 items are for research purposes only and are not normally scored.

According to Briggs-Myers and McCaulley (1989, p.3), the main purpose of the MBTI is to identify four basic preferences. The four preferences are:

Extroversion-Introversion (EI). The EI index is designed to reflect whether a person is extroverted or introverted. Extroverts are oriented primarily toward the outer world; thus they tend to focus their perception and judgment on people and objects. Introverts are oriented primarily toward the inner world and thus tend to focus their perceptions and judgments upon concepts and ideas.

Sensing-Intuition (SN). The SN index is designed to reflect a person's preference between two opposite ways of perceiving; one may rely primarily upon the process of sensing, which reports observable facts or happenings; or one may rely more upon the less obvious process of intuition which reports meaning, relationships, and/or possibilities that have been worked out beyond the reach of the conscious mind.

Thinking-Feeling (TF). The TF index is designed to reflect a person's preference between two contrasting ways of judgment. A person may rely primarily on thinking to decide impersonally on the basis of logical consequences, or a person may rely primarily on feeling to decide primarily on the basis of personal or social values.

Judgment-Perception (JP). The JP index is designed to describe the process a person uses primarily in dealing with the outer world, that is, with the extroverted part of life. A person who prefers judgment has reported a preference for using a judgment process (either thinking or feeling) for dealing with the outer world. A person who prefers perception has reported a preference for using a perceptive process (either sensing or intuition) for dealing with the outer world.

Keirsey and Bates (1984) provide another means of understanding MBTI types. Their method is called temperament. They state, "One's temperament is that which places a signature or thumbprint on each of one's actions, making it recognizably one's own" (p.27). In Keirsey and

Bates' model there are four temperaments encompassing the 16 MBTI types. The four temperaments are as follows:

SP: This temperament includes ISTP, ESTP, ISFP, ESFP. The SP "must be free; he must not be tied or bound or confined or obligated," (Keirsey & Bates, 1984, p.31).

SJ: This temperament includes ISFJ, ESFJ, ISTJ, ESTJ. The SJs "...must belong and this belonging must be earned....Dependency, for the SJ is neither a legitimate condition nor desire....Moreover, he must be the giver not the receiver; the caretaker, not the cared for" (Keirsey & Bates, 1984, p.41).

NF: This temperament includes INFJ, ENFJ, INFP, and ENFP. The NF's quest is for becoming. "The NF's truest self is the self in search of itself, or in other words, his purpose in life is to have a purpose in life" (Keirsey & Bates, 1984, p.58).

NT: This temperament includes INTPs, ENTPs, INTJs, and ENTJs. "Power fascinates the NT but power over nature not power over people. Scratch the NT, find a scientist. The NT loves intelligence, which means; doing things well under varying circumstances" (Keirsey & Bates, 1984, p.48). Another way of understanding MBTI preferences is provided in the Page (1985) model. There is some debate between proponents of this approach and the Keirsey and Bates approach.

The IS quadrant consists of the group called "Thoughtful Realist." This quadrant includes ISTJ, ISTP,

ESTP, ESTJ. Krebs-Hirsh and Kummerow (1990, p.12) describe the IS leader as leading "through attention to what needs to be done." Their individual focus is on "practical consideration." Their organizational focus is on "continuity." The statement that best characterizes this group is "lets keep it!" McCaulley (1976, p.734) in discussing how the types in the IS quadrant use knowledge stated, "Knowledge is important to establish truth. The IS types are contemplative pragmatists, interested in developing the facts to prove the soundness of ideas." She further labeled this group the "Careful Compilers."

The ES quadrant consists of the "Action-Oriented Realist." Krebs-Hirsh and Kummerow (1990, p.12) describe the ES leader as leading "through doing." Their individual focus is on "practical action." Their organizational focus is on "results." The statement that best describes this group is, "Let's do it!" McCaulley (1976, p.734) described the ES type as being "interested in practical action." Knowledge is seen as "important for practical use." She labeled this group the "pragmatists."

Krebs-Hirsh and Kummerow (1990, p.12) describe the IN quadrant as "Thoughtful-Innovator." This group is seen as leading "through ideas to what needs doing." Their individual focus is "intangible thoughts and ideas." Their organizational focus is "vision." The statement that best describes this group is, "Lets think about it differently!"

McCaulley (1976, p.734) states that for the IN type "knowledge is important for its own sake." She labeled this group the "academics." She further describes this quadrant as "the most scholarly and least practical; introversion makes concepts and ideas more interesting than action, intuition makes future possibilities and theory more interesting than present realities and facts."

The EN quadrant is described by Krebs-Hirsh and Kummerow (1990, p.12) as "Action-Oriented Innovators." This group "leads through enthusiasm." Their individual focus is on "systems and relationships." Their organizational focus is on "change." The statement which best describes them is "let's change it!" McCaulley (1976, p.734) calls the EN group "innovators." She states that for them "knowledge is important for innovations." Their interests are seen as being related to possibilities.

The validity of the MBTI is addressed in the manual. Briggs-Myers and McCaulley (1989) report in that manual, extensive correlational data to support their claims of MBTI validity.

The reliability of the MBTI has been extensively studied. Buros Institute of Mental Measurements (1985, p.1032) states test-retest reliability is good and coefficients range from .48 over 14 months to .87 over 7 weeks, depending on the particular dimension.

Research Questions and Findings

The first research question asked: "What is the distribution of Myers-Briggs types for students attending the PMC?" The results are listed in Table 1.

Table 1
Distribution of Myers-Briggs Types
(N = 2818)

ISTJ 887 31.5%	ISFJ 74 2.6%	INFJ 48 1.7%	INTJ 314 11.1%
ISTP 137 4.9%	ISFP 22 .8%	INFP 43 1.5%	INTP 169 6.0%
ESTP 80 2.8%	ESFP 15 .5%	ENFP 50 1.8%	ENTP 156 5.5%
ESTJ 475 16.9%	ESFJ 46 1.6%	ENFJ 36 1.3%	ENTJ 265 9.4%

The second research question asked: "What is the distribution by temperament of students attending the PMC?" The results are listed in Table 2.

Table 2
Distribution of PMC Students
by Temperament
(N = 2818)

SJ 1482 52.6%	SP 254 9.0%	NF 177 6.3%	NT 904 32.1%
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The third research question asked: "What is the distribution by Myers-Briggs Type of students who are

affiliated with the Army, Navy, Air Force, Marines and Industry?" The results are listed by Service in Tables 3-7.

Table 3
Distribution of Myers-Briggs Types
for PMC Students Affiliated with the Army
(N = 804)

ISTJ	ISFJ	INFJ	INTJ
269	15	13	77
33.5%	1.9%	1.6%	9.6%
ISTP	ISFP	INFP	INTP
45	3	8	49
5.6%	.4%	1.0%	6.1%
ESTP	ESFP	ENFP	ENTP
28	3	12	38
3.5%	.4%	1.5%	4.7%
ESTJ	ESFJ	ENFJ	ENTJ
155	15	10	64
19.3%	1.9%	1.2%	8.0%

Table 4
Distribution of Myers-Briggs Types
for PMC Students Affiliated with the Navy
(N = 786)

ISTJ	ISFJ	INFJ	INTJ
259	22	12	85
33.0%	2.8%	1.5%	10.8%
ISTP	ISFP	INFP	INTP
42	8	12	46
5.3%	1.0%	1.5%	5.9%
ESTP	ESFP	ENFP	ENTP
20	3	10	37
2.5%	.4%	1.3%	4.7%
ESTJ	ESFJ	ENFJ	ENTJ
131	11	10	78
16.7%	1.4%	1.3%	9.9%

Table 5
 Distribution of Myers-Briggs Types
 for PMC Students Affiliated
 with the Air Force
 (N = 854)

ISTJ	ISFJ	INFJ	INTJ
254	29	17	103
29.7%	3.4%	2.0%	12.1%
ISTP	ISFP	INFP	INTP
35	7	16	51
5.6%	.4%	1.0%	6.1%
ESTP	ESFP	ENFP	ENTP
28	7	21	53
2.8%	.8%	2.5%	6.2%
ESTJ	ESFJ	ENFJ	ENTJ
124	19	10	83
14.5%	2.2%	1.2%	9.7%

Table 6
 Distribution of Myers-Briggs Types
 for PMC Students Affiliated
 with the Marine Corps
 (N = 123)

ISTJ	ISFJ	INFJ	INTJ
37	3	0	11
30.1%	2.4%	0	8.9%
ISTP	ISFP	INFP	INTP
8	3	4	8
6.5%	2.4%	3.3%	6.5%
ESTP	ESFP	ENFP	ENTP
3	0	2	6
2.4%	0	1.6%	4.9%
ESTJ	ESFJ	ENFJ	ENTJ
26	1	2	9
21.1%	.8%	1.6%	7.3%

Table 7
 Distribution of Myers-Briggs Types
 for PMC Students Affiliated
 with Industry
 (N = 169)

ISTJ	ISFJ	INFJ	INTJ
44	3	1	26
26.0%	1.8%	.6%	15.4%
ISTP	ISFP	INFP	INTP
7	0	1	10
4.1%	0	.6%	5.9%
ESTP	ESFP	ENFP	ENTP
4	1	3	17
2.4%	.6%	1.8%	10.1%
ESTJ	ESFJ	ENFJ	ENTJ
25	0	3	24
14.8%	.8%	1.8%	14.2%

Figures 1-5 (in Appendix A) provide graphic depictions of the data displayed in Tables 3-7.

Question four asked: "What is the distribution by gender of students attending the PMC?" The results are shown in Table 8.

Table 8
 Distribution of Myers-Briggs Types
 by Gender
 for PMC Students
 (N = 2818)
 (N = 2604 MEN & 214 WOMEN)

	ISTJ	ISFJ	INFJ	INTJ
MEN	850/ 32.7%	63/ 2.4%	43/ 1.7%	287/ 11%
WOMEN	37/ 17.3%	11/ 5.1%	5/ 2.3%	27/ 12.6%
	ISTP	ISFP	INFP	INTP
MEN	126/ 4.8%	20/ .8%	35/ 1.3%	151/ 5.8%
WOMEN	11/ 5.1%	2/ .9%	8/ 3.7%	18/ 8.4%
	ESTP	ESFP	ENFP	ENTP
MEN	75/ 2.9%	11/ .4%	42/ 1.6%	140/ 5.4%
WOMEN	5/ 2.3%	4/ 1.9%	8/ 3.7%	16/ 7.5%
	ESTJ	ESFJ	ENFJ	ENTJ
MEN	442/ 17%	40/ 1.5%	29/ 1.1%	248/ 9.5%
WOMEN	33/ 15.4%	6/ 2.8%	7/ 3.3%	16/ 7.5%

Question five asked: "What is the distribution by MBTI preference for students attending the PMC?" Table 9 reports the results of this analysis.

Table 9
Distribution by Preference
for PMC Students
(N = 2818)

Extraversion	39.9%
Introversion	60.1%
Sensing	61.6%
Intuition	38.3%
Thinking	88.1%
Feeling	11.9%
Judging	76.1%
Perceiving	23.9%

Discussion

The results of this descriptive analysis indicated that 31.5% of students who were administered the MBTI between 1985 and 1991 were ISTJs. The second largest group of students (16.9%) were found to be ESTJs. The INTJs comprised 11.1% of the sample and ENTJs made up 9.4%. This group of four types represented 68.9% of the sample. In other words, almost 70% of the PMC students who were described in this study shared

the Thinking-Judging orientation. This finding should not be surprising. McCaulley, Godleski, Yokomoto, Harrisberger, and Sloan (1983, p.394) state the "stereotypical engineer is logical, tough-minded and decisive. In MBTI terms, the tough-minded are the TJ." In a study consisting of data extracted from the MBTI Data Bank, McCaulley (1990) reported on 7,463 people who indicated that they were managers or administrators. She found that 21.7% were ISTJs, 14.3% were ESTJs, 9.9% were INTJs, and 11.2% were ENTJs. A casual assessment of PMC students showed 60-70% of each class were engineers. Therefore, the comparison with stereotypical engineers appears to be valid. In addition, this distribution of subjects placed the four largest groups into each of the four quadrants, which Page (1985) identified as useful in understanding how organizations operate. Krebs-Hirsh and Kummerow (1990) cited the earlier work of Page (1985) to describe the characteristics of people whose preferences were in each of the four quadrants.

The 31.5% of this sample which comprise the ISTJ group are classified in the IS quadrant and are called "Thoughtful Realists."

Krebs-Hirsh and Kummerow (1990, p.16) describe the contributions that ISTJs make to an organization:

Contributions to the organization

- Get things done steadily and on schedule.
- Are particularly strong with detail and careful in managing it.
- Have things at the right place at the right time.
- Can be counted on to honor commitments and follow through.
- Work well within organizational structure.

They also describe the ISTJs possible weaknesses:

Potential pitfalls

- May overlook the long-range implications in favor of day-to-day operations.
- May neglect interpersonal niceties.
- May become rigid in their ways and thought of as inflexible.
- May expect others to conform to standard operating procedures and thus not encourage innovation.

When the other three types which are found in this quadrant (ISFJ, ISTP, ISFP) are added to the ISTJ group, 39.8% of the entire sample was classified in the IS quadrant.

The 16.9% of this sample which comprises the ESTJ group are classified in the ES quadrant and are called "Action-Oriented Realists." Krebs-Hirsh and Kummerow (1990, p.19) describe the contributions and potential pitfalls of ESTJs this way:

Contributions to the organization

- See flaws in advance.
- Critique programs in a logical way.
- Organize the process, product, and people.
- Monitor to see if the job is done.
- Follow through in a step-by-step way.

Potential pitfalls

- May decide too quickly.
- May not see the need for change.
- May overlook the niceties in working to get the job done.
- May be overtaken by their feelings and values if they ignore them for too long.

When the other three types that comprise this quadrant (ESTP, ESFP, ESFJ) were added to the ESTJ group, 21.8% of the sample was classified as being in the ES quadrant.

The 11.1% of the sample which made up the INTJ group was classified as being in the IN quadrant. Krebs-Hirsh and Kummerow (1990, p.28) list the contributions to the organization and potential pitfalls of INTJs as follows:

Contributions to the organization

- Provide strong conceptual and design skills.
- Organize ideas into action plans.
- Work to remove all obstacles to goal attainment.
- Have strong visions of what the organization can be.
- Push the organization to understand the system as a whole with its complex interaction among parts.

Potential pitfalls

- May appear so unyielding that others are afraid to approach or challenge them.
- May criticize others in their striving for the ideal.
- May have difficulty letting go of impractical ideas.
- May ignore the impact of their ideas or style on others.

When the other three types which make up this quadrant (INFJ, INFP, INTP) are added, 20.3% of the sample fell within this quadrant.

The 9.4% of this sample which was typed as ENTJ were classified as being in the EN quadrant. Krebs-Hirsh and Kummerow (1990, p.31) list the contributions to the organization and potential pitfalls of ENTJs as follows:

Contributions to the organization

- Develop well thought-out plans.
- Provide structure to the organization.
- Design strategies which work toward broader goals.
- Take charge quickly.
- Deal directly with problems caused by confusion and inefficiency.

Potential pitfalls

- May overlook a people's needs in their focus on the task.
- May overlook practical considerations and constraints.
- May decide too quickly and appear impatient and domineering.
- May ignore and suppress their own feelings.

When the other three types that comprise the EN quadrant are added, 18% of this sample fall within this quadrant.

Conclusions

McCaulley (1990, p.411) addressed the issue of who reaches the top in management. She states:

Management samples are more heavily weighted toward sensing types. However, top management samples tend to be more evenly divided between sensing and

intuitive types (executives in CCL programs, top executives in Japan, senior federal executives). Intuitives are in the majority among innovative leaders, such as the founders of Inc. 500 firms, top executives, and rising stars in education.

In summary, though any type can reach the top, executives most likely to do so are somewhat more likely to prefer extraversion and intuition, and are highly likely to prefer thinking and judgment.

Based on the descriptive analysis provided in this paper. It appears the population is very similar to the people McCaulley (1990) identified as managers. However, the ENTJs which she describes as top executives comprise only 9.4% of this sample.

McCaulley (1990, p.410) also addressed the issue of type differences in changing organizational environments. She cited two studies which combined temperament and quadrant analysis. She states:

Mitroff and Kilmann (1975) and Kilmann and Mitroff (1976) have described their experiences in asking clients to describe their "ideal organization." STs describe the ideal organization with clear procedures, meticulously followed. The SFs describe a friendly place where people like working together and feel included. The NFs describe a company with enough resources to serve humanitarian goals fully; and the NTs envision a place where there are clear strategic plans and the organization is moving toward its long range goals.

What does this mean for students who attend the PMC? To begin, 56.1% of the students in this sample were STs. They want clear procedures, which seldom change and that everyone follows (often without question). They make up the majority of this sample of PMC students. What are the implications of

having STs dominate an organization such as a Program Management Office which has been characterized as being in an almost constant state of change? How do you energize this portion of the work force and its leadership that most likely is operating in the environment they find least rewarding and perhaps most stressful? This is a question worthy of further investigation.

The SFs comprise only 5.5% of this sample. Who takes care of their need for inclusion in the Program Management Office? Perhaps they perceive themselves as different, not fitting in, and unappreciated. If so, it is possible that these people are forced to operate in what could be called a "siege mentality." Perhaps they find little pockets of warmth that let them survive in an otherwise cold environment, or they leave the organization.

The NFs make up 6.3% of this sample. How is the purpose of the Program Management Office communicated? Is any attention paid to the service of the country or humankind? If not, how does a Program Manager get this group to "buy into" his or her goal.

Finally, the NTs comprise 32% of this sample. For them the vision of the organization and where it is going in the long run is very important. Is the plan clear? If not, this group will detect inconsistencies immediately, and their energy will possibly be diverted to other areas of interest.

One other possible area of concern is related to predicted changes in the United States work force. If the demographic changes which are predicted by Johnston and Packer (1987) occur, far greater emphasis will have to be placed on team building in the Program Management Office of the future. These changes include more women entering the work force and minorities comprising a larger share of new workers. The sample described in this study is more than 92% male. Of the men described in this study, approximately 95% are white. How successful this largely homogenous population will be at adapting to a changing work force is a matter of no small debate. What is clear, however, is that change will be occurring. The question of the resistance to change by this population is evidenced by the statements of many PMC students. Recent PMC students have reported a great deal of resistance to the implementation of Total Quality Management in their organizations. If this resistance is, in fact, a characteristic of the acquisition environment, successful work groups may become more and more rare. The time to address this issue is now. Hopefully, this paper will be of assistance in that effort.

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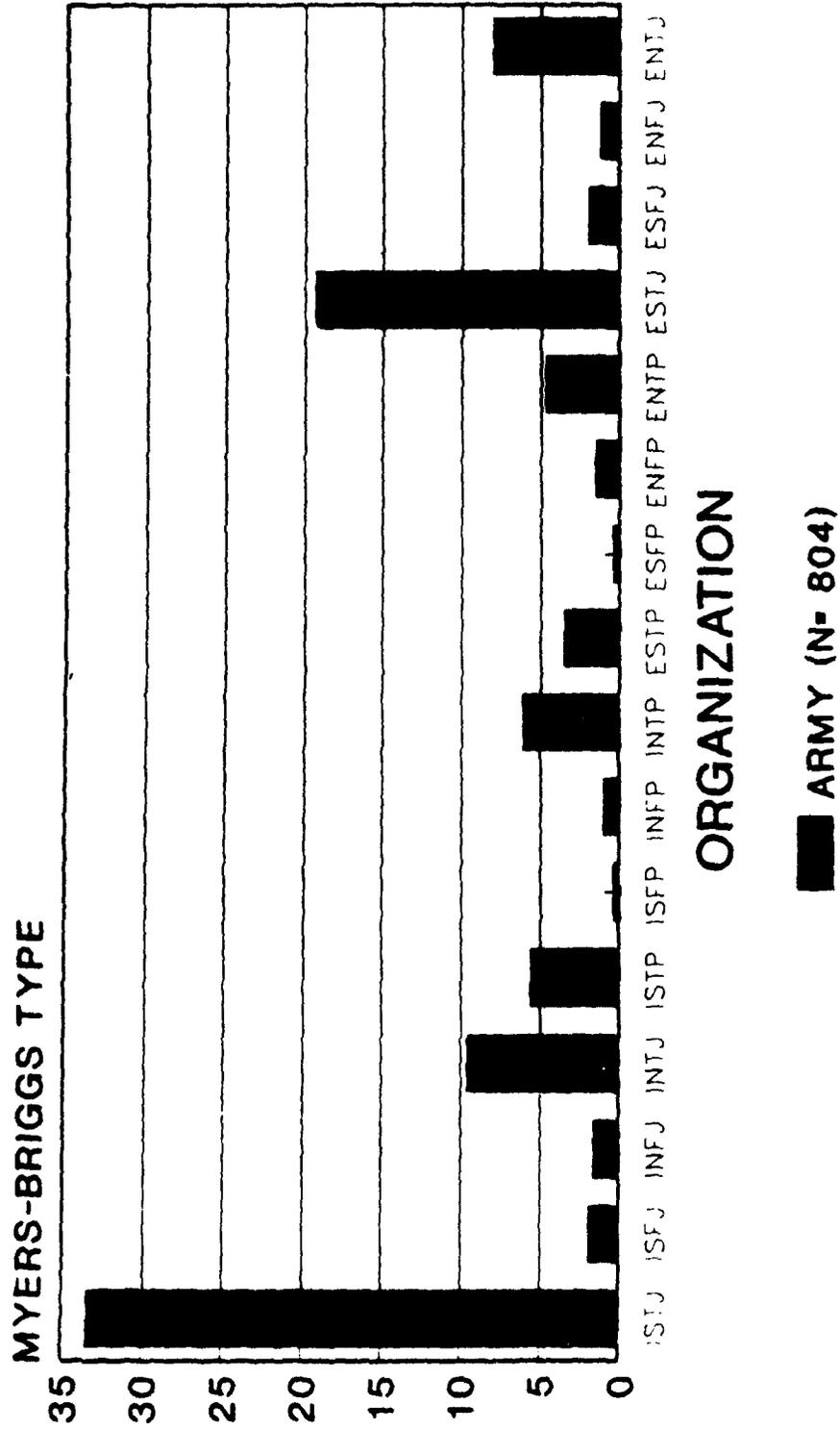
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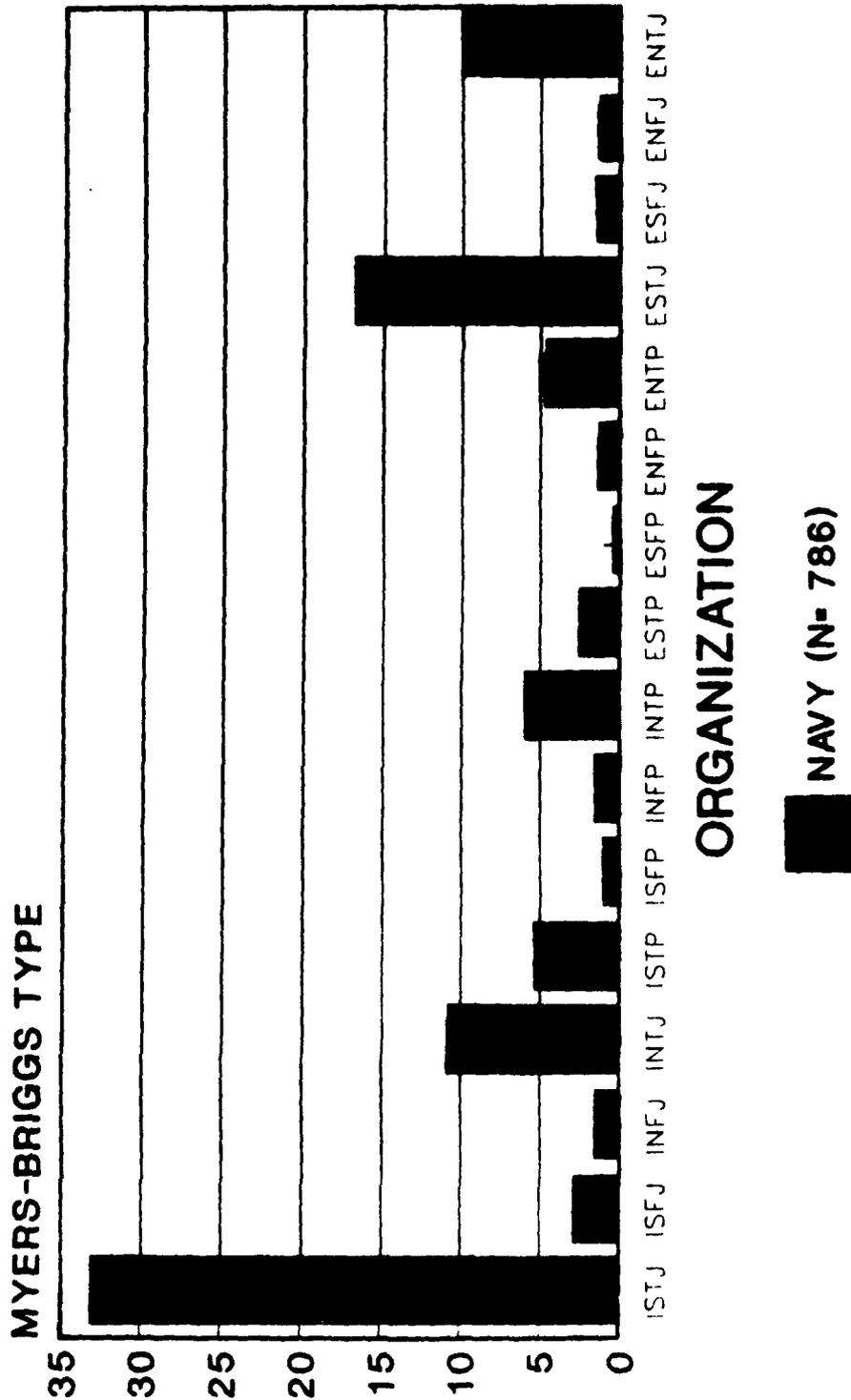
APPENDIX

A

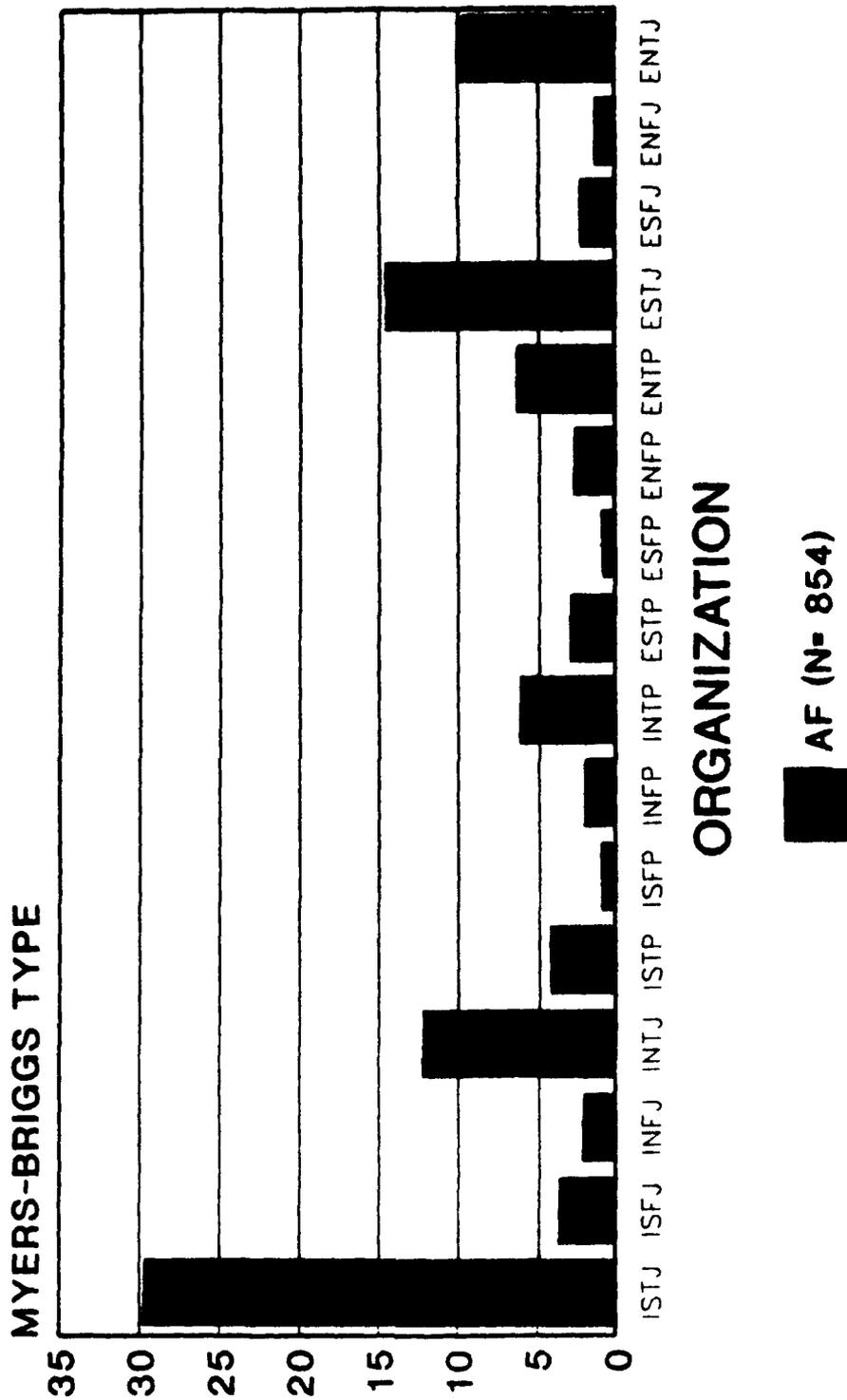
MYERS BRIGGS TYPE FOR THE ARMY



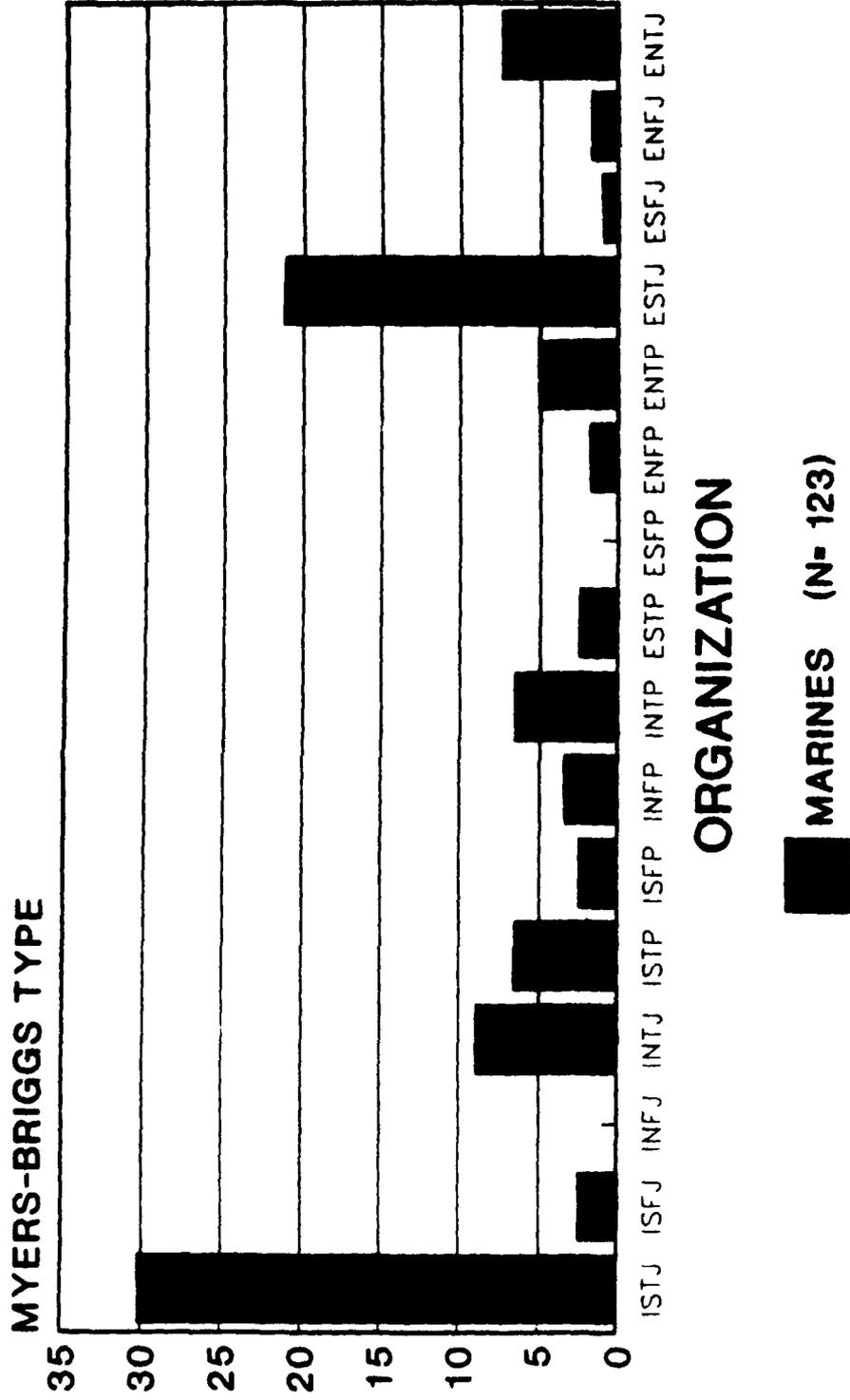
MYERS BRIGGS TYPE FOR THE NAVY



MYERS BRIGGS TYPE FOR AIR FORCE



MYERS BRIGGS TYPE FOR THE MARINES



MYERS BRIGGS TYPE FOR INDUSTRY STUDENTS

