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Moderating Effects of Station Isolation on Antecedents and Consequences of Fraternization

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THESIS

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MODERATING EFFECTS OF STATION ISOLATION ON ANTECEDENTS AND CONSEQUENCES OF FRATERNIZATION

THESIS

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Abstract

The purpose of this study is to analyze any differences in reported incidents of fraternization based on relative isolation of location. To fulfill this purpose, a variety of types of fraternization cases were reviewed and analyzed. All data extracted was coded across five factors of fraternization and punishment. Statistical tests determined whether differences in fraternization factors were due to common error or to true differences based on relative isolation of location.

Seven different hypotheses relating fraternization and location were tested. Statistical analysis showed that reported fraternization incidents are more likely to be of a sexual nature and involve people of different genders. In addition, fraternization cases in isolated areas are more likely to involve members within the same chain of command. The data also showed that isolated locations have a higher relative occurrence of non-judicial punishment, while fraternization in non-isolated locations is more likely to result in judicial punishment (dismissal resulting from court-martial).

MODERATING EFFECTS OF STATION ISOLATION ON ANTECEDENTS AND CONSEQUENCES OF FRATERNIZATION

I. Introduction

In the military, policies and regulations are a way of life. Policies and regulations provide necessary guidance to military members. Some policies focus on presenting a professional image. Other policies emphasize good order and discipline. Still others center on maintaining morale. Over the years, fraternization policies have been defended on all three of these bases. Fraternization policies play a key role in defining professional image and maintaining both good order and discipline as well as morale.

Fraternization also has a controversial side. The Air Force has detailed policies governing fraternization. However, these policies, as any rules, are not always followed. The Air Force does not have standard guidance on punishment for violating fraternization policies and there are vast differences in how similar incidents are handled. The Air Force needs information documenting differences in how fraternization cases are handled, as well as what types of fraternization are more likely to occur, and which types of units are more likely to experience it. The premise of this thesis is that differences in types of fraternization and differences in the way fraternization cases are handled may be influenced by the unit's relative degree of isolation.

Differences in types of fraternization can be described by four variables. The gender of the persons involved (same gender or different gender), the nature of the fraternization (platonic or sexual), whether or not the individuals are in the same chain of

command, and the marital status of the individuals (married or unmarried) are all factors relevant to fraternization. These variations are summarized in the following table:

Table 1. Factors Influencing Type of Fraternization

Factors	Variations	
Gender	Same	Mixed
Nature of Relationship	Sexual	Platonic
Chain of Command	Within	External
Marital Status	Married	Not married

While differences in types of fraternization vary by form, differences in outcome vary in severity. Differences in how fraternization cases are handled can vary in three ways: no action, non-judicial punishment (reprimand), and judicial punishment (dismissal). This thesis investigates these different factors and outcomes according to differences in the social situation due to relative level of isolation.

Influence of Unit Isolation

Air Force policies governing fraternization stem from the assumption that fraternization among military members is harmful to organizational morale. Fraternization carries with it numerous potential problems: it undermines morale, reduces

combat effectiveness, and disrupts good order and discipline. The goal of official policy is to deter fraternization through the threat of adverse action. An added assumption of official policy is that swift action and appropriate punishment in fraternization incidents will strengthen the Air Force's conviction to avoid fraternization in its units. These policies are based on the idea that this assumption is universally true, regardless of situational characteristics of any particular unit.

In some locations (or units), conditions may exist that lessen the validity of these assumptions. The thesis of this paper is that units in remote locations are more likely to experience fraternization because of the characteristics of the particular situation. I believe certain types of fraternization may be more prevalent at locations more removed from society. That is, certain types of fraternization occur more often and in greater quantity at geographically removed locations. Remote locations may experience a higher frequency of sexual, different gender relationships and social, same gender relationships between officers and enlisted members. Remote locations may also have more sexual, different gender relationships between two officers in the same chain of command.

Different types of fraternization are more likely to be tolerated at remote locations because of the circumstances associated with being in a remote location (small numbers, tougher mission, fewer people, and higher need to "blow off steam"). For example, a young fighter pilot hanging out or having a drink with his crew chief is not likely to draw excessive attention at a remote location. Similarly, a Lieutenant nurse in the hospital who is dating her senior doctor (a Lieutenant Colonel) may not draw attention.

In addition to an increased likelihood of fraternization, remote locations may posses certain situational characteristics that impact the tolerance of fraternization by

members of the organization. In a location severely isolated from the civilian population, especially when a small number of people are working closely, platonic, same gender relationships (both officer-enlisted and officer-officer) are likely to be tolerated. People at remote locations may believe that relationships that violate policy should be tolerated since they are only friends and there are so few people to choose from to have as friends. Similarly, non-platonic different gender relationships (both officer-enlisted and officer-officer) are more likely to be tolerated since there is such a small choice of people to date.

Tolerance of unit commanders may also be influenced by situational characteristics of remote locations. The Air Force assumption is that fraternization is harmful to unit morale. While this may be true, *charges* of fraternization in smaller units at more remote locations may also be harmful to morale. Fraternization charges against a member in a small unit are more harmful to morale than they would be in a larger unit. For example, a fraternization charge against a pilot at a remote assignment is likely to have a deeper impact on overall morale than a similar charge at a larger location with a greater civilian population. This is because there are fewer people at the remote location, and those present tend to be more closely knit than at larger locations. When one person is convicted of an offense, the residual effect is greater when the population is smaller.

Although fraternization may be more likely at remote locations, the possibility of increased tolerance may effectively limit the reporting of fraternization incidents. The possibility exists that fraternization may be more likely to occur at locations isolated from the civilian population, but it also may be more highly tolerated or less reprimanded based on the larger impact on unit morale that the reprimand would carry. This

contradiction to the basic assumptions of Air Force policy is one of the driving forces behind my choice for this thesis.

If tolerances for fraternization are indeed higher at remote locations, what happens to a person's attitude when he or she leaves that isolated area? Is this attitude simply "left behind" when people return to more civilian-populated areas? It is possible that personnel who have experienced or witnessed higher fraternization levels in isolated locations develop certain tolerances and then carry these tolerances with them to future, less isolated assignments.

Research Problem

This thesis begins an investigation of these issues by first asking whether there is a relationship between situational characteristics and the incidence and severity of fraternization charges and consequences. Specifically, the thesis explores the following investigative questions:

Does location isolation impact fraternization as a whole?

Are certain factors of fraternization more prevalent than others are when the unit is isolated?

Does the severity of consequences differ depending on the relative isolation of locations?

Scope

This study is limited to Air Force Personnel and Air Force data. Fraternization policies and cases from other services are not addressed, except when a given policy or

case involves other services. During the time period analyzed in this thesis, policies of other services have differed from those of the Air Force. Analyzing cases from other services would provide limited information relating to Air Force trends.

The intended method for this research is to collect and analyze data from recent fraternization cases. The data collected will be used to classify cases according to degree of isolation of location, type of fraternization, and consequences from fraternization, to include both type (judicial vs. non judicial) and degree (Letter of Reprimand, Article 15, Court Martial, etc).

Summary

Fraternization policies have changed through the years based on current needs. The Air Force teaches that fraternization is harmful to morale, good order and discipline, and combat effectiveness. Air Force policies are designed to reduce fraternization incidents with the use of threat of adverse action. These policies intend to provide uniform guidance to all unit commanders, without regard to situational characteristics. Fraternization differs by type as well as severity of punishment. Relative isolation of location may impact type, frequency, and punishment of fraternization. This thesis investigates the possibility that fraternization policy implementation differs based specifically on relative isolation of the unit.

II. Background and Hypotheses

Introduction

Changing definitions and policies, influences of social attraction on various types of fraternization, and differences in tolerance and impact on unit morale, all support the hypothesis that fraternization differs based on the relative isolation of the unit. This chapter addresses the historical definition of fraternization and the changes that have led to Air Force policy today. Next, various factors that may influence the incidence and reporting of fraternization are introduced and explained in the psychological context of why people may tend to fraternize, and why some unit members and commanders may tolerate fraternization more than others. The consequences of fraternization are examined and potential differences in fraternization punishments based on location are discussed.

Changing Definitions and Policies

Definition. Webster defines fraternization as the act of "associating or mingling as brothers or on fraternal terms; to associate on close terms with members of a hostile group esp. when contrary to military orders; to be friendly or amiable" (Webster, 1981, 453). This "mingling" has been discouraged in the military for a long time. Throughout history, people have been divided by classes based on social standing, economic well being, religious preferences, and even political choices. The class structure extends into

the military through the long tradition of separating officers from the lower subordinate ranks. Socializing between classes has been looked down upon at least since Medieval Europe. In 1621, King Gustavus Adolphus of Sweden had a formal policy against fraternization. His Code of Articles regulated social contact between officers and their men, in an effort to maintain social castes (Wright, 1987, 1).

U.S. Military Perspective. The United States military on the other hand, has a much less precise definition of fraternization. Actually, the military's definition, though specifying officer – enlisted socialization, has traditionally been vague and inconsistent and often the courts have barely been able to make sense of it. Department of Defense (DoD) definitions of and policies governing fraternization have been continually changing over the last few decades.

Fraternization is a prosecutable offense in the United States Armed Services. Through the years fraternization has been maintained as an offense because it was a long-standing custom in the military. However, the last few decades have brought to the surface changes in fraternization policies. Fraternization is an offense, but the basis of the offense now includes the potential disruption of good order and discipline, not merely "custom." It is easy to comprehend why fraternization could be harmful to the sanctity of the military, but something that is less clear, is what constitutes fraternization.

Traditionally, fraternization applied to male officer-male enlisted relationships. These relationships were targeted because the custom had always said they should not be tolerated. The military eventually shifted its view. Male officer-male enlisted relationships were still not tolerated, but the emphasis on custom gave way to a logical

argument based on maintaining the chain of command, morale, and good order and discipline.

With technological advancements came increased tolerance of relationships. Some jobs virtually forced officers and enlisted to spend more time together, sharing workspace, as well as living quarters on occasion. Throughout this period of changes, Air Force policy continued to restrict social relationships between officers and their men.

As females entered the military, the concept of fraternization again evolved into a modernized version. At this point, fraternization concerns were of a sexual nature. Male officer-female enlisted/officer relationships were not tolerated, with an emphasized concern on sexual harassment. As more women received commissions, female officer-male enlisted relationships entered the spotlight. With these potential relationships came an increased awareness of and concern for adultery.

Policy Changes. In the early 1970s, views and policies about fraternization began changing significantly. Up to this point in time, most fraternization convictions had involved homosexual relationships (Flatten, 1981, 111). At the turn of this decade, the Navy experienced a particularly interesting case. Two of its male officers were charged with sexual offenses and fraternization with enlisted men. The resulting conviction was not homosexuality. Rather, the court found that because these relationships went beyond normal "social intercourse" or "innocent" acts of friendship, they violated the custom against fraternization. This decision seemed to openly imply that some types of socialization would be permitted (McDevitt, 1984-1985, 564).

As the number of females in the military increased, fraternization encompassed a more heterosexual and even platonic definition. As this definition changed, so did the

prosecution of this age-old offense. Commanders and military members in general are more tolerant of more forms of fraternization. Colonel Franklin P. Flatten offers examples of situations that were not prosecuted between 1973 and 1977 at a numbered Air Force legal office. These examples "give a glimpse of the extent to which the old barriers have fallen":

> A lieutenant and an airman (both female) from different squadrons sharing an apartment; A lieutenant (female) married to a master sergeant in the same unit; a major (male) married to a sergeant in the same unit; three male lieutenants 'subletting' an extra bedroom in their apartment to a female airman; officers patronizing all ranks clubs; officers and airmen living together; officers bringing airmen into the officers' club for an evening of drinking and dancing. (Flatten, 1981, 114)

With the 1977 revision of Air Force Regulation 30-1 paragraph 4-b, it seemed that the Air Force had officially changed its views on fraternization. In defining officer and enlisted relationships, this revised regulation acknowledged that loyalty and mutual respect are two key factors in the officer and enlisted relationship and that as professionals we must treat one another with dignity. It went on to concede that since officers and enlisted personnel "live and work in a very close environment and endure common hardships, (they) [ibid] frequently develop close personal friendships. However, friendships must not interfere with judgement or duty performance" (AFR 30-1 1977, 4.b). This new regulation suggests not only that personal relationships are acceptable, but that they also are expected. As the Air Force prepared to enter a new decade, it appeared to have adopted a new attitude toward fraternization. However, in apparent opposition to this new regulation, by 1980, the Air Force was still resisting acts such as the consolidation of officer and enlisted clubs, because of the threat of fraternization presented in that consolidation (Flatten, 1981, 114).

The changes in attitude toward fraternization that developed in the 1970s represent the Air Force's changing conception of fraternization from that of a custom to that of a necessity to maintain good order and discipline, even while implying that good order could, at least to some degree, coexist with fraternization. The responsibility to control fraternization still rested on the officer. An officer acting in a less than professional manner (to include fraternization) has never been tolerated. As Egeland stated:

> An individual does not have an inherent right to continued service as an officer. It is a privilege.... By virtue of an appointment, an officer enjoys a position of trust and assumes a continuing responsibility for leadership and for conducting himself or herself in an exemplary manner at all times. (Egeland, 1983, 17)

In 1983, the Air Force again revised its policy on professional relationships, this time returning to the opinion that fraternization was unacceptable and again citing custom as the basis. This new revision stated, "There is a long standing and well recognized custom in the military service that officers shall not fraternize or associate with enlisted members under circumstances that prejudice the good order and discipline of the Armed Forces of the United States" (AFR 30-1 1983, 7.a).

Despite this revision, there was still vagueness in regard to fraternization. Even this new regulation mentioned only circumstances that are harmful to good order and discipline, again leaving room for interpretation and assumptions that some relationships may not be harmful. The actions of the Air Force support this assumption: the Air Force openly encourages participation in off-duty activities such as chapel programs, intramural sports, inter-service athletic competitions, and youth programs (Thompson, 1986, 14). Even when it comes to duty-related items, the Air Force's actions condone some degree

of fraternization. Flight Crews and Inspector General (IG) teams travel, train, eat, and even reside together. These actions are necessary for flight crews on alert, or preparing for emergencies, and for IG teams to be able to review the day's report and prepare for the next day (Thompson, 1986, 15). In the case of officer and enlisted marriages, Air Force policy is again inconsistent. When an officer and enlisted person are married and assigned to the same base, they are both eligible for base housing, and can live in either officer or enlisted quarters. Likewise, either member can frequent the club to which their spouse is a member (Thompson, 1986, 15). All of these situations will almost inevitably lead to excess familiarity, and therefore fraternization, among officers and enlisted members.

The continual confusion brought by the changes to Air Force policies on fraternization, and the confusion resulting from the Air Force creating situations which do not seem to follow the pre-existing policies, represent the undeniable need for the Air Force to take a stand. For example, the Air Force needs to rewrite and clearly define its housing policy. In regard to athletic events, if it is unacceptable for team members to be on a first name basis, the base papers should also avoid this when printing related articles. The Air Force should discourage, not sponsor, club events like "bosses' night," which inadvertently condone fraternization (Thompson, 1986, 25). These examples indicate that the Air Force needs to establish firm, consistent, and explicit policies on fraternization.

In 1995 the Air Force experienced a new beginning in terms of fraternization policies. Air Force Regulation 35-62 (the successor to AFR 30-1) was replaced with Air Force Instruction 36-2909. This new instruction included punitive actions and provided

specific prohibitions in regard to unprofessional relationships. It still addressed fraternization in terms of "custom" but for the first time, the Air Force cited explicit examples of fraternization (Clark, 1997, 10). Specifically:

> Officers may be prosecuted for violating the following specific prohibitions...with reasonable accommodation of married members and members related by blood or marriage: gambling with enlisted members, borrowing money from or otherwise becoming indebted to enlisted members, engaging in sexual relations with or dating enlisted members, and sharing living accommodations with enlisted members, unless required by military operations. (Clark, 1997, 11)

In 1996, under the leadership of Air Force chief of staff General Ronald R Fogleman, AFI 36-2909 was revised. Fraternization was now defined to include any personal relationship. It explained that a personal relationship between an officer and an enlisted member, whether on or off-duty, violates the customary acceptable behavior in the Air Force, which in turn harms good order and discipline and brings disgrace upon the officer involved (AFI 36-2909 1996, 2.2.1).

The Air Force finally had a definition of fraternization and specific policies. However, some commanders seemed to be taking these policies to extremes, almost as though they were on "witch hunts." In 1997, after Air Force Secretary Sheila Widnall intervened twice in two months to stop over-publicized fraternization prosecutions, she and General Fogleman issued a memorandum to commanders about fraternization (Matthews, 1997, 12). The letter explained what is intended by the current policy and emphasized to commanders that they should use discretion in prosecuting fraternization. It reminded them that,

> Not every case warrants severe sanction; some can be corrected with minimal timely action. It is essential to keep in mind that the purpose of the prohibition against fraternization and unprofessional relationships is to maintain good order

and discipline, to foster the trust and confidence of subordinates in their military superiors, and to prevent abuse of authority. (Fogleman and Widnall, 1997)

Current Policy. In July 1997, Rudy de Leon, the new defense undersecretary for personnel and readiness, conceded that the current rules on fraternization still "create confusion" due to differences among the military services. New rules are required, and these new rules must be understood by everyone from the newest airman to the headquarters staff, and "must be clear" and "fair." De Leon said he would recommend to Defense Secretary William Cohen a "uniform set of fraternization rules for people in all the services" (Wilson, 1997, 8).

De Leon followed through on his word. On 29 July 1998, DoD officials released a single standard on fraternization for all branches of the United States Armed Services. This new standard prohibits relationships between officers and enlisted members, regardless of whether they are in the same chain of command or the same branch of service. According to a memo released by Cohen, relationships "such as dating, sharing living accommodations, engaging in intimate or sexual relations, business enterprises, commercial solicitations, gambling, and borrowing between officer and enlisted regardless of their service" are forbidden. Cohen added that each of the service's policies should be "similarly worded" and "clearly understandable by all." Plans to implement the new rules were due to Cohen on 28 August 1998, and training materials were due by 2 October 1998 (Weible, 1998, 11).

After years of struggle and countless policy changes, the Air Force has explicitly defined fraternization and taken a stand on tolerance (or lack thereof) of fraternization. In the last few decades, policies have spanned the entire spectrum, from a high tolerance

where fraternization is expected (1977) to a virtual zero tolerance where it seems everything is prosecuted (1997). The leaders of the military have finally insisted that all branches come together and address the issue in a similar fashion.

Impacts of Current Policy on Research. Since1995, commanders have been encouraged to use discretion and consider all factors and consequences when prosecuting fraternization. This thesis uses data from 1996 to the present, which means all cases analyzed are under this guidance. Reported incidents of fraternization (judicial and non-judicial) seen should be more sexual than social in nature, or should have had a substantial impact on morale.

Factors of Fraternization

Four major factors define fraternization cases. Each factor plays a role in defining the fraternization charges, and determining whether disciplinary action will be pursued against the accused. Every fraternization case can be classified with regard to each of these factors. These factors were previously described in Chapter I as the nature of the fraternization (platonic or sexual), gender of the persons involved (same gender or different gender), whether or not the individuals are in the same chain of command, and the marital status of the individuals (married or unmarried). In the following sections I develop my argument as to how each of these factors are relevant to the incidence and tolerance of fraternization.

The primary thesis of this paper is that these four factors are influenced by the degree of isolation associated with the location of the incident. Isolation of a location is determined by how far the location is from a culturally similar urban area. This

definition results in two significant implications. First, any location in a foreign country is, because of cultural differences, considered isolated. Second, any location that does not have an urban area (at least 50,000 people) within a 50-mile radius is considered isolated (Office of Management and Budget, 1999).

Whether or not a location is considered isolated plays a large role in fraternization. For any military member, the number of similar people in the vicinity of the base is obviously altered depending on whether or not the location is isolated.

Explanations of Attraction. Although fraternization policies are clearly defined, it seems some people do not adhere to the regulations. It is possible that these people simply have no regard for laws. It is possible that some people intentionally break rules merely to see if they can. However, most people who are charged with fraternization probably do not begin relationships with the intent to fraternize. They may simply be attracted, act on these feelings, and find themselves in situations that are characterized as fraternization. There are numerous psychological theories involving human attitudes and relationships that can explain this attraction – action sequence.

Familiarity has a natural impact on human behavior. It is normal to like people better over time. This may be true even when you are limited to exposure of people, not necessarily interaction with them. This is known as the *mere exposure effect*. Basically, we like people more when we are around them more. Studies have shown that attraction to people can be increased even by exposure to photographs or names (Stephan, 1990, 287).

Military members are not exempt from this theory. In today's military, there is a strong possibility of people experiencing the exposure effect. Especially with today's

high operations tempo and numerous extended temporary duties, military members are spending more and more of their time around other military members. More than ever, officers are potentially spending larger quantities of time with enlisted members in their units. With increasing numbers of women in the Air Force, these interactions are often between members of the opposite sex.

Stephan's theory builds on earlier research on interpersonal distance by Scotland and Canon (1972). Interpersonal distance is frequently related to how much one person likes another. People are more likely to have a higher opinion of those close to them than of those who are distant (Scotland and Cannon, 1972, 228). People who can choose who they want to be around are probably going to choose people they like. Conversely, more often than not, people will like those that they are around.

Again, this theory is easily applied to the military. People who work together spend time together. The more time people spend together, the more likely they are to like each other. The nature of some jobs or locations forces people to spend large quantities of time together. Spending time together is almost undoubtedly going to lead to a higher degree of closeness, or mutual liking.

Stephan's (1990) and Scotland and Canon's (1972) theories both deal with the influence of proximity on social attraction. People like those they see and those whom they are around. Over time, and with increases in technology, officers and enlisted members are working more closely together. In addition, certain jobs and locations provide for more opportunity and necessity for members to be together and work together. It seems only natural that these units or locations would experience a higher incidence of what eventually could lead to improper relationships.

Another psychological theoryl, the *reinforcement-effect model*, suggests that people prefer to be around those who "reinforce" them. That is, people want to be surrounded by others who have similar views, ideas, and values. This naturally reinforces those views and opinions (Howitt, et al., 1989, 61). Although military personnel possess a wide variety of ideals and values, as would any diverse group of people, many military members share similar views with respect to issues that impact them as military members, such as patriotism, dedication to duty, or respect for authority. Further, people within a given career field are likely to have more specific views in common, pertaining to their particular career. Security Forces personnel are likely to share a high regard for the law. Medical Corps personnel may have strong desires to take care of others.

Regardless of the beliefs, it is probable to find the people you work with share those beliefs. When you find people who share your views, you will naturally want to be around them even more. As long as people are feeling validated by those around them, they will continue to surround themselves by those people. In most cases, this wouldn't be a problem. In locations with limited personnel, there is a higher probability that a person's reinforcement will come from someone of a different rank.

These three theories of interpersonal attraction explain how the combined effects of isolation and factors influence the relative frequency, tolerance, and report of fraternization incidents. Each factor of fraternization leads to a subsequent hypothesis, building on the primary thesis of this paper.

Nature of Fraternization and Gender. Fraternization cases can be divided into categories according to the nature of the incident (sexual versus platonic) and whether the

incident occurs among mixed or same gender pairs. Social fraternization can involve mixed or same gender pairs, while sexual fraternization cases typically will be mixed gender. This is due largely to the nature of the offense; same gender sexual fraternization tends to be a secondary charge to homosexuality.

The 1997 change in Air Force policy was intended to avoid "unwarranted sever sanctions" (Fogleman and Widnall, 1997) and should have led commanders to steer away from severe punishment for "social fraternization" and emphasize more deterrence measures for non-platonic fraternization among heterosexual couples. Although social fraternization does take place, history leads us to expect that most fraternization will be of a sexual nature.

Social psychological theories tell us that people tend to like those whom they are around, and they are around those with whom they work. This is true especially in isolated locations, people are more likely to develop relationships with people they work with, since there are significantly fewer people in the proximity of the base.

Air Force policy suggests that to steer away from social fraternization witch hunts, fraternization cases, in general, are more likely to be of a sexual nature and therefore mixed gender. From this information, two hypotheses can be formulated:

H_1: Consistent with air Force policy, reported incidents of fraternization cases are more likely to be of a sexual nature and involve different genders.

H_2: Social and sexual fraternization should have a higher relative occurrence at isolated locations than at non-isolated locations due to fewer numbers of alternatives at isolated locations.

Chain of Command. Some improper relationships develop between supervisors and subordinates, while other relationships involve people who do not work together. Since the impact of proximity on relationship development has already been discussed, it follows intuitively that fraternization would be more likely to occur within a given unit than across units. However, with further analysis, this intuition may not be accurate.

When an officer fraternizes with a coworker or subordinate, it is rational to assume other coworkers will be aware of the relationship. As was pointed out in the historical definition of fraternization, relationships with subordinates can have a detrimental impact on morale. When people in an organization know that an officer is involved with a subordinate, some of them are likely to become disgruntled. They may believe that the subordinate is receiving special privileges. The potential disruption of unit morale is an obvious negative impact of fraternization. Assuming the average officer is rational, this disruption would be realized, and thus, avoided. Therefore, under normal circumstances, fraternization would be more likely to occur outside the chain of command.

However, an isolated location is not a normal circumstance. Isolated locations are often compared to "fish bowls." They are microcosms in and of themselves. The number of people in isolated locations tends to be smaller than in non-isolated locations. People know what other people do, regardless of whether or not they actually work together. Therefore, in an isolated location, it is not expected that chain of command will be a deterrent to a person who may be likely to participate in an improper relationship.

The lack of deterrent leads to the theory that chain of command fraternization should have a higher relative occurrence in isolated locations than in non isolated

locations. Additionally, in isolated locations, chain of command should have no obvious impact on discouraging fraternization, and may even result in a higher frequency than non chain of command relationships. This results in the following hypothesis:

H_3: Fraternization cases in non-isolated areas should be predominantly non chain of command, while chain of command should have no impact on cases in isolated locations.

Marital Status. Whether people are married or unmarried is the final factor that can influence fraternization. Building on previously stated theories that most fraternization is of a sexual nature, one would assume that most people in improper relationships are not married. There are two reasons for this assumption. First, since most improper sexual relationships begin with dating, it is more likely that unmarried people will invest the time to date. Married people would have a more difficult time dating when their spouse is present. Second, if one of the persons involved in the relationship is married, the offense of adultery becomes an issue. Since adultery has not suffered the changes in policy and definition that fraternization has, it is easier to identify and prosecute than fraternization.

Isolated locations may present a slightly different scenario. Since many isolated locations are overseas, often military members go alone, leaving spouses and family in the United States. Without the company of their loved ones, they may look for some form of reinforcement in the people around them (Howitt, et al., 1989, 61). This could impact the potential for married people to have improper relationships.

The impact of marital status on fraternization provides the following hypotheses:

H_4: A higher percentage of unmarried people should be charged with fraternization than married people.

H_5: In isolated locations, there should be a higher relative reporting of married people committing fraternization than when compared to non isolated locations.

Consequences

The possible consequences of fraternization range from no action, to letters of counseling, to dismissal and confinement as a result of general courts-martial. The severity of the punishment is a result of numerous factors. Attitude of commander, specific details of the relationship, public knowledge, unit morale, and location are just some of the things that could influence what type of punishment a person found guilty of fraternization might receive.

The high operations tempo in the military today influences morale, regardless of location. However, units in isolated areas have to contend with additionally stressful situational factors. Living in a culturally different environment can impact morale. Living in a secluded or rural area with few civilians around can influence morale. Being away from family can influence morale. These are all problems that people in non isolated locations do not have to contend with on a regular basis.

Commanders in all locations should be concerned with preserving the morale of the individuals assigned to their unit. Morale preservation should impact the way they view and punish fraternization cases. When morale is more vulnerable, as it is in isolated locations, it makes sense that commanders would try to preserve morale as much as

possible. In punishing fraternization cases, a more serious punishment will potentially have a greater impact on morale. Since morale is a potentially bigger concern in isolated locations, more serious punishments are probably a greater risk to morale in isolated locations.

The nature of punishment is the basis for the final hypotheses:

H_6: It is expected that isolated locations will have more non-judicial punishments (reprimands) than judicial punishments (dismissal).

H_7: There should be a higher relative occurrence of serious punishments (dismissal) in non-isolated locations than in isolated locations.

In total, there are seven hypotheses, six of which can be tested. The following chapter will explain how each hypothesis will be analyzed. Given the characteristics of the data collected, I was unable to test the second hypothesis. The raw frequency of occurrence of fraternization is offset by the relative number of people at isolated units compared to non-isolated units, as well as the expected tendency of isolated unit commander to have higher tolerance of fraternization in their units. The implications of this in terms of limitations of this study and necessary future research will be discussed in Chapter V.

III. Methodology

Introduction

The previously stated research problems and hypotheses were designed to answer the problem statement, "Is there a relationship between situational characteristics and the incidence and severity of fraternization charges and consequences?" Therefore, the initial stage of the research sought to identify data that would respond to the research problems and hypotheses.

Data Acquisition

Fraternization information for this analysis was obtained in two primary ways. First, a search was performed on the Department of Defense Webflite, an Executive Agent for Computerized Research Website. The second means of acquiring data was through the Freedom of Information Act (FOIA) process. FOIA requests were distributed to all Air Combat Command Bases, as well as the Air Force Judge Advocate General's office.

In addition to fraternization data, base population information was also compiled, as was local area population data surrounding each base. Data was extracted from the 1997 USAF Almanac: Guide to Air Force Installations Worldwide, and the U.S. Census Bureau Website.

Webflite Search. Webflite is a DoD website that accesses libraries, legal sites, reference materials, and Judge Advocate General (JAG) Opinions. This website also maintains a database of all court-martial appeals in the DoD. A search of this particular database provided all U.S. Military cases involving fraternization and conduct-unbecoming. These cases were then sorted to discard all of those that were not from the Air Force Court of Criminal Appeals. Each case was read to identify the information applicable to each variable.

FOIA Process. With the help of the Paul E. Cassidy, Chief of Records Management Unit, Support Services, Wright Patterson Air Force Base, a FOIA request was written to be distributed to every Air Combat Command Installation. As is required of every FOIA submission, no information protected by the Privacy Act was requested. The information sought included age, rank, gender, nature of offense, description of punishment, and whether or not the individual submitted a request to Resign in Lieu of punishment. An identical FOIA request was later submitted to the Headquarters, USAF/JAG. As bases responded to the request, all data was analyzed to identify applicable information.

Population Information. Population information was collected for every Air Force base and for local communities surrounding each base. Each base was categorized based on population, distance to nearest culturally similar community, and population of that community. These data contribute to the analysis in determining whether or not a base is considered to be in an isolated location.

Data Organization

As information was collected and received, it was analyzed for content. The data was then organized topically (Appeal or FOIA) in a matrix format. For verification, and to avoid duplicate entries, all data received directly from bases were cross-referenced against that received from Air Force JAG. Any duplicated information was adjusted to reflect only one entry, and was verified for content and consistency.

Data Description

In essence, four types of data were received. Fraternization appeals and conduct-unbecoming appeals were collected from Webflite, while ACC Installation cases and Air Force cases were collected through the FOIA. Fraternization appeals produced 40 cases representing 21 bases. Conduct-Unbecoming appeals produced 15 cases involving 14 bases. Of 18 ACC bases contacted, 11 responded with a total of 22 cases. Air Force JAG reported 97 cases representing 52 bases. Eleven of these cases were determined to have been previously included in ACC responses. This left 86 cases representing 45 bases.

Validation of Variables

To ensure that all cases were adequately analyzed, five individuals assisted in validating the variables used. Of the 40 fraternization appeals, 25 were reviewed, with 100% accuracy. All of the conduct-unbecoming appeals were reviewed, with 100% accuracy. Appeals cases were only used as a means of validating case interpretation, they were not used in the analysis portion of this thesis. Of the 22 cases from ACC bases, 20 were reviewed, also with 100% accuracy. The cases from Air Force JAG were not

reviewed. They were presented from the JAG already coded and were therefore simply transcribed. In total, 60 of 77 cases (78%) were coded twice with 100% accuracy. Of the cases contributing to this analysis, 20 of 108 were coded twice with 100% accuracy.

Data Analyses

The data gathered will first be described in terms of conditional and unconditional probabilities of the particular factor given the classification of location. A comparison of these probabilities will determine if relative isolation appears to influence that factor of fraternization. An apparent difference is insufficient evidence to draw a conclusion because that difference may or may not be attributable to common cause error. To address the issue of common cause error, I will compare the relative magnitude of differences to the estimated common cause error.

All data collected was coded across each factor and organized in three by two contingency tables using classification of location (CONUS isolated, overseas isolated, or non-isolated) and classification of the factor of interest (e.g., punishment: reprimand or dismissal). Each factor required a separate observed count contingency table.

Hypotheses 1 and 4 require a comparison of unconditional probabilities without regard to the relative isolation of a unit. This test requires a comparison of population proportions. The null hypothesis, that proportions are equal is represented by:

H_o: $p_o = .5$

I will compute the hypothesized standard error and the test statistic in order to determine the p-value. If the p-value is less than $\alpha = .10$, I will reject the null hypothesis (Brightman, 1999, 231).

Hypotheses 3, 5, 6, and 7 require a chi-square test for independence to test if each factor of fraternization is independent of location classification (CONUS Isolated, Overseas Isolated, or Non-Isolated). Using Reprimand (R) as an example, the null hypothesis, that the classifications are independent, is represented by:

H_o: P(R) = P(R|CI) = P(R|OI) = P(R|NI)

Failing to reject the null hypothesis implies there is no statistical difference between location classifications for that given factor of fraternization (Conover, 1980, 160). The alternative hypothesis, then, is that relative isolation of the unit does matter, and at least one of the conditional probabilities is different from the others.

Each factor has a similar null hypothesis, and the chi-square test for independence is employed to determine whether the pattern of conditional probabilities in the data are unlikely, given the null hypotheses are true. In all analyses a value of χ^2 is compared to a test statistic, χ^2_α, where $\alpha = .10$ representing my willingness to accept a 105 chance of incorrectly rejecting the null hypothesis in favor of its alternative. Since each table has 3 rows and 2 columns, there are (3-1)(2-1) = 2 degrees of freedom. This gives us χ^2_α = 4.605. If χ^2 calculated is greater that χ^2_α then the null will be rejected, otherwise, we must fail to reject the null hypothesis.

The null hypothesis for nature of fraternization, that there is no difference in sexual fraternization based on relative isolation, is represented by:

H_o: P(S) = P(S|CI) = P(S|OI) = P(S|NI)

The null hypothesis for gender type of fraternization, that there is no difference in different gender fraternization based on relative isolation, is represented by:

H_o: P(D) = P(D|CI) = P(D|OI) = P(D|NI)

The null hypothesis for chain of command, that there is no difference in chain of command based on relative isolation, is represented by:

H_o: P(C) = P(C|CI) = P(C|OI) = P(C|NI)

The null hypothesis for marital status, that there is no difference in marital status based on relative isolation, is represented by:

H_o: P(M) = P(M|CI) = P(M|OI) = P(M|NI)

In all cases, the following definitions apply:

R – Reprimand
S – Sexual Fraternization
D – Different Gender
C – Chain of Command
M – Married
CI – CONUS Isolated
OI – Overseas Isolated
NI – Non-Isolated

If the null hypothesis is rejected, I will investigate the differences between the conditional probabilities in order to determine whether the data supports the alternative hypotheses developed in Chapter II.

Missing Data

Although case reviews resulted in 100% accuracy, some information in random cases was missing. In certain situations, nature, chain of command, marital status, or gender may have been unstated. In these cases, both the researcher and the reviewer

agreed that the information was unknown. This results in slightly varied total raw numbers in the final analysis.

When analyzed, each factor has a different total number of cases, due to the above mentioned missing data. The possibility exists that the unknown data could significantly alter any findings. This possibility will be further discussed in Chapter V.

IV. Analysis of Fraternization

Introduction

This thesis answers the research problem introduced in Chapter I: Is there a relationship between isolation of location and the type of fraternization and severity of charges and consequences? This chapter answers those questions by presenting the data collected as well as an analysis derived from that data. The chapter covers three major areas. First, the results of determining isolation of the locations are presented. Next are the results of analyzing the cases with respect to the four factors of fraternization. Finally, this chapter presents the results of varying consequences of fraternization based on location.

Results and Analysis

Location Isolation. The Air Force has 80 major installations worldwide. Of these 80 installations, 14 are overseas. All overseas installations are considered isolated on the basis of cultural differences. There are 66 major installations in the United States (including Alaska and Hawaii). The U.S. installations were rank ordered based on local population. Any installation with a local population not considered a metropolitan area, in accordance with U.S. Census Bureau Standards (Office of Management and Budget, 1999) was considered isolated. There are 14 locations that fall into this category, leaving 52 U.S. locations in the category of non-isolated.

Fraternization Factors. Since 1996, 56 installations have filed fraternization charges against 108 people. These 108 cases were analyzed and coded according to the four factors of fraternization. Of these records, 14 were from CONUS isolated locations, 23 were from overseas isolated locations, and 71 were from non-isolated locations. Each of the four factors was compared with CONUS isolated, overseas isolated, and non-isolated locations. A comparative analysis was performed with the information collected through the data acquisition process. In some situations, case data provided were incomplete and factor values could not be determined. All analyses performed were based on the available data. The results of the analyses follow.

Nature of Fraternization. Several hypotheses regarding nature of fraternization were developed in Chapter 2. Specifically, it was hypothesized that fraternization cases are more likely to be of a sexual nature. The data collected showed 78 cases indicated nature of fraternization. In 59 cases, fraternization was of a sexual nature, and only 19 cases were social in nature (Table 2).

Table 2. Nature of Fraternization (actual cases)

	Sexual	Social	Total
CONUS Isolated	8	3	11
Overseas Isolated	11	6	17
Non-Isolated Locations	40	10	50
Total	59	19	78

A test of population proportions was conducted to test whether the differences could be attributed to common error. The null hypothesis, that the proportions are equal, is given by Ho: p_o=.5 . Since the true proportion of sexual fraternization is 59/78 = .756, the difference in the hypothesized and true proportion is .756 - .5 = .256 . To determine if .256 is a significant difference, the hypothesized standard error must be computed.

$$\sqrt{\frac{p_o q_o}{n}} = \sqrt{\frac{.5 * .5}{78}} = .0566$$

The test statistic is $\frac{.756 - .5}{.0566} = 4.529$. I can then calculate the p-value, .00000296. Since this is less than α = .10, the null hypothesis can be rejected, the proportions of sexual and social fraternization are statistically different.

It was also hypothesized that social fraternization should have a higher relative occurrence at isolated locations than at non-isolated locations. To test this hypothesis I examined conditional probabilities. The basic question to be answered is whether there are differences in the factors given that the location is more or less isolated. If no relationship exists between the nature of fraternization and the relative frequencies of isolation, then the conditional probabilities of sexual fraternization, controlling for isolation, would equal the unconditional probability of sexual fraternization.

The conditional probability of sexual fraternization (S) given CONUS isolated (CI) is given by:

$$P(S \mid CI) = \frac{P(S \cap CI)}{P(CI)} = \frac{8/78}{11/78} = \frac{0.10}{0.14} = 0.73$$

The conditional probability of sexual fraternization (S) given overseas isolated (OI) is given by:

$$P(S \mid OI) = \frac{P(S \cap OI)}{P(OI)} = \frac{11/78}{17/78} = \frac{0.14}{0.22} = 0.65$$

The conditional probability of sexual fraternization (S) given non-isolated (NI) is given by:

$$P(S \mid NI) = \frac{P(S \cap NI)}{P(NI)} = \frac{40/78}{50/78} = \frac{0.51}{0.64} = 0.80$$

The unconditional probability of sexual fraternization (S) is given by:

$$P(S) = \frac{59}{78} = 0.76$$

If relative isolation did not impact the nature of fraternization then P(S|CI), P(S|OI), P(S|NI) and P(S) would all be equal. The probabilities appear to be different, but are the differences due to common error, or assignable variation? If the differences are too improbable to be assigned to common error, then the null hypothesis, that there is no difference, must be rejected. The Chi-square test of independence answers this question using actual and expected values of each factor. Expected values for each cell were determined by multiplying the number of observations across each classification (location) by the number of observations down each classification (factor) and then dividing by the total number of observations for that factor (McClave, et al., 1998, 922) (Table 3).

Table 3. Nature of Fraternization (observed and expected values)

	Sexual	Social
Actual CONUS Isolated	8	3
Expected	8.32	2.68
Actual Overseas Isolated	11	6
Expected	12.86	4.14
Actual Non-Isolated	40	10
Expected	37.82	12.18

Given the above values, a value for χ^2 can be determined (McClave, et.al, 1998, 915).

$$\chi^2 = \frac{(8-8.32)^2}{8.32} + \frac{(11-12.86)^2}{12.86} + \frac{(40-37.82)^2}{37.82} + \frac{(3-2.68)^2}{2.68}$$

$$+ \frac{(6-4.14)^2}{4.14} + \frac{(10-12.18)^2}{12.18} = 1.671$$

With $\alpha = .10$, and (3-1)(2-1)=2 degrees of freedom, the critical value for the test statistic, χ^2_α is 4.605. The rejection region is $\chi^2 > \chi^2_\alpha$. Since $1.671 < 4.605$, I fail to reject the null hypothesis. In addition, using EXCEL, I get a p-value > .43, which tells us the probability of these differences due to random error is greater than 43%. This is a high probability, and makes it a highly likely event. Therefore, I cannot conclude that there are changes in the nature of fraternization due to changes in relative frequency of isolation.

Gender. Like nature of fraternization, it was also hypothesized that fraternization cases were more likely to involve different genders. Only 72 cases indicated gender of individuals involved, however, 64 cases involved persons of different genders. Only 8 cases analyzed were single gender (Table 4).

Table 4. Gender of Fraternization (actual cases)

	Different Gender	Same Gender	Total
CONUS Isolated	9	2	11
Overseas Isolated	13	1	14
Non-Isolated	42	5	47
Total	64	8	72

A comparison of proportions revealed a difference of gender types. The null hypothesis, that the proportions are equal, is given by Ho: $p_o = .5$. Since the true proportion of same gender fraternization is 64/72 = .889, the difference in the hypothesized and true proportion is .889 - .5 = .389 . To determine if .389 is a significant difference, the hypothesized standard error must be computed.

$$\sqrt{\frac{p_o q_o}{n}} = \sqrt{\frac{.5 * .5}{72}} = .0589$$

The test statistic is $\frac{.889 - .5}{.0589} = 6.5997$. I can then calculate the p-value, .0000000. Since this is less than $\alpha = .10$, the null hypothesis can be rejected, the proportions of same gender and different gender fraternization are statistically different.

Although isolation was not hypothesized to have an influence on types of gender involved, I decided to investigate the conditional probabilities. If no relationship exists between the gender type of fraternization and the relative frequencies of isolation, then the conditional probabilities of different gender fraternization, controlling for isolation, would equal the unconditional probability of different gender fraternization.

The conditional probability of different gender fraternization (D) given CONUS isolated (CI) is given by:

$$P(D|CI) = \frac{P(D \cap CI)}{P(CI)} = \frac{9/72}{11/72} = \frac{0.13}{0.15} = 0.82$$

The conditional probability of different gender fraternization (D) given overseas isolated (OI) is given by:

$$P(D|OI) = \frac{P(D \cap OI)}{P(OI)} = \frac{13/72}{14/72} = \frac{0.18}{0.19} = 0.93$$

The conditional probability of different gender fraternization (D) given non-isolated (NI) is given by:

$$P(D|NI) = \frac{P(D \cap NI)}{P(NI)} = \frac{42/72}{47/72} = \frac{0.58}{0.65} = 0.89$$

The unconditional probability of different gender fraternization (D) is given by:

$$P(D) = \frac{64}{72} = 0.89$$

If relative isolation impacted the gender type of fraternization then P(D|CI), P(D|OI), P(D|NI) and P(D) would all be different. This does not appear to be the case. The Chi-square test of independence for the data presented in Table 5 provides no evidence of a difference here.

Table 5. Gender of Fraternization (observed and expected values)

	Different Gender	Same Gender
Actual CONUS Isolated	9	2
Expected	9.78	1.22
Actual Overseas Isolated	13	1
Expected	12.44	1.56
Actual Non-Isolated	42	5
Expected	41.78	5.22

Given the observed and expected values, a value for χ^2 can be determined.

$$\chi^2 = \frac{(9-9.78)^2}{9.78} + \frac{(13-12.44)^2}{12.44} + \frac{(42-41.78)^2}{41.78} + \frac{(2-1.22)^2}{1.22}$$

$$+ \frac{(16-1.56)^2}{1.56} + \frac{(5-5.22)^2}{5.22} = .7976$$

With $\alpha = .10$, and (3-1)(2-1)=2 degrees o freedom, the critical value of the test statistic, χ^2_α is 4.605. The rejection region is $\chi^2 > \chi^2_\alpha$. Since $.7976 < 4.605$, we fail to reject the null hypothesis. In addition, using EXCEL, we get a p-value = .67, which tells us the probability of these differences due to random error is 67%. This is a high probability, and makes it a highly likely event. I cannot conclude there are changes in gender type of fraternization due to changes in relative frequency of isolation. I fail to reject the null, however inductive reasoning does not allow me to accept the null, which would be a case of faulty logic (Cooper and Schindler, 1998, 470).

Chain of Command. As discussed in Chapter II, fraternization within the same chain of command is more likely to be noticed than fraternization among units. Chapter II also established that chain of command should not have as much influence in dissuading fraternization in isolated locations. It was hypothesized that fraternization in non-isolated locations should be predominantly non chain of command. Only 57 cases provided information about chain of command. In non-isolated locations 21 cases did not involve chain of command, while 16 cases did. Only five of the cases at isolated locations did not violate chain of command while 15 cases were within the same chain of command (Table 6).

Table 6. Chain of Command (actual cases)

	Chain of Command	Non-Chain	Total
CONUS Isolated	5	4	9
Overseas Isolated	10	1	11
Non-Isolated Locations	16	21	37
Total	31	26	57

I must determine whether these apparent differences in chain of command are due to common error or attributable to actual variations. Conditional probabilities need to be examined. If no relationship exists between the chain of command and the relative frequencies of isolation, then the conditional probabilities of chain of command, controlling for isolation, would equal the unconditional probability of chain of command.

The conditional probability of chain of command (C) given CONUS isolated (CI) is given by:

$$P(C \mid CI) = \frac{P(C \cap CI)}{P(CI)} = \frac{5/57}{9/57} = \frac{0.09}{0.16} = 0.56$$

The conditional probability of chain of command (C) given overseas isolated (OI) is given by:

$$P(C \mid OI) = \frac{P(C \cap OI)}{P(OI)} = \frac{10/57}{11/57} = \frac{0.18}{0.19} = 0.91$$

The conditional probability of chain of command (C) given non-isolated (NI) is given by:

$$P(C \mid NI) = \frac{P(C \cap NI)}{P(NI)} = \frac{16/57}{37/57} = \frac{0.28}{0.65} = 0.43$$

The unconditional probability of chain of command (C) is given by:

$$P(C) = \frac{31}{57} = 0.54$$

If relative isolation impacted the chain of command then P(C|CI), P(C|OI), P(C|NI) and P(C) would all be different. They appear to be different, but again I must test for independence to determine whether or not to reject the null hypothesis, that there is no difference. The Chi-square test of independence answers this question (Table 7).

Table 7. Chain of Command (observed and expected values)

	Chain of Command	Non-Chain
Actual CONUS Isolated	5	4
Expected	4.89	4.11
Actual Overseas Isolated	10	1
Expected	5.98	5.02
Actual Non-Isolated	16	21
Expected	20.12	16.88

Given the above values, a value for χ^2 can be determined.

$$\chi^2 = \frac{(5-4.89)^2}{4.89} + \frac{(10-5.98)^2}{5.98} + \frac{(16-20.12)^2}{20.12} + \frac{(4-4.11)^2}{4.11}$$

$$+ \frac{(1-5.02)^2}{5.02} + \frac{(21-16.88)^2}{16.88} = 7.7716$$

With α=.10, and (3-1)(2-1)=2 degrees o freedom, the critical value of the test statistic, χ^2_α is 4.605. The rejection region is $\chi^2 > \chi^2_\alpha$. Since 7.7716 > 4.605, I reject the null hypothesis. In addition, using EXCEL, I get a p-value = .0205, which means the probability of these differences due to random error is 2.05%. This probability is less than my acceptable type 1 error rate of .10, implying it is highly unlikely no relationship exists between relative isolation and fraternization incidents involving chain of command. The pattern of data is consistent with my hypotheses that reported incidents of

chain of command fraternization would be relatively higher at isolated locations. This relationship is strongest for overseas isolated locations.

Marital Status. In non-isolated locations, families accompany most military members. Since most fraternization was expected to be of a sexual nature, it was hypothesized that a higher number of unmarried people should be charged with fraternization than married people. Of 97 cases that provided information about marital status, approximately half seemed to involve married persons (Table 8).

Table 8. Marital Status (actual cases)

	Married	Unmarried	Total
CONUS Isolated	7	7	14
Overseas Isolated	7	13	20
Non-Isolated Locations	35	28	63
Total	49	48	97

Additionally, isolated locations often leave military members away from their families. This contributed to the basis of the second hypothesis about marital status and fraternization. It was hypothesized that a higher relative occurrence of married people committing fraternization would be found at isolated locations than non-isolated locations. To test this hypothesis, again conditional probabilities need to be examined. If no relationship exists between marital status and the relative frequencies of isolation, then

the conditional probabilities of marital status, controlling for isolation, would equal the unconditional probability of marital status.

The conditional probability of marital status (M) given CONUS isolated (CI) is given by:

$$P(M \mid CI) = \frac{P(M \cap CI)}{P(CI)} = \frac{7/97}{14/97} = \frac{0.07}{0.14} = 0.50$$

The conditional probability of marital status (M) given overseas isolated (OI) is given by:

$$P(M \mid OI) = \frac{P(M \cap OI)}{P(OI)} = \frac{7/97}{20/97} = \frac{0.07}{0.21} = 0.35$$

The conditional probability of marital status (M) given non-isolated (NI) is given by:

$$P(M \mid NI) = \frac{P(M \cap NI)}{P(NI)} = \frac{35/97}{63/97} = \frac{0.36}{0.65} = 0.56$$

The unconditional probability of marital status (D) is given by:

$$P(M) = \frac{49}{97} = 0.51$$

If relative isolation impacted the marital status then P(M|CI), P(M|OI), P(M|NI) and P(M) would all be different. They appear to be different, but again we must test for independence to determine whether or not to reject the null hypothesis, that there is no difference. The Chi-square test of independence answers this question (Table 9).

Table 9. Marital Status (observed and expected values)

	Married	Unmarried
Actual CONUS Isolated	7	7
Expected	7.07	6.93
Actual Overseas Isolated	7	13
Expected	10.10	9.90
Actual Non-Isolated	35	28
Expected	31.82	31.18

Given the above values, a value for χ^2 can be determined.

$$\chi^2 = \frac{(7-7.07)^2}{7.07} + \frac{(7-10.10)^2}{10.10} + \frac{(35-31.82)^2}{31.82} + \frac{(7-6.93)^2}{6.93}$$

$$+ \frac{(13-9.9)^2}{9.9} + \frac{(28-31.18)^2}{31.18} = 2.567$$

With $\alpha = .10$, and (3-1)(2-1)=2 degrees of freedom, the critical value of the test statistic, χ^2_α is 4.605. The rejection region is $\chi^2 > \chi^2_\alpha$. Since $2.567 < 4.605$, I fail to reject the null hypothesis. In addition, using EXCEL, I get a p-value = .277, which mans the probability of these differences due to random error is 27.7%. This is a high probability, and makes it a highly likely event. Therefore, I cannot conclude that there are changes in marital status due to changes in relative frequency of isolation.

Fraternization Consequences. Living in an isolated location presents additional stresses that are not found in non-isolated locations. Since morale is a concern in all locations, but more vulnerable in isolated locations, it was hypothesized that isolated locations would have more non-judicial punishments (reprimands) than judicial punishments (dismissals). Initial qualitative analysis showed that this theory was correct. Of 37 cases from isolated locations, 34 resulted in reprimands (Table 10).

Table 10. Fraternization Consequences (actual cases)

	Reprimands	Dismissals	Total
CONUS Isolated	12	2	14
Overseas Isolated	22	1	23
Non-Isolated Locations	50	20	70
Total	84	23	107

In addition to the number of reprimands versus dismissals, it was also hypothesized that there would be a higher relative occurrence of dismissals in non-isolated locations than in isolated locations. To test this hypothesis, again conditional probabilities need to be examined. If no relationship exists between punishment and the relative frequencies of isolation, then the conditional probabilities of reprimands, controlling for isolation, would equal the unconditional probability of reprimands.

The conditional probability of reprimands (R) given CONUS isolated (CI) is given by:

$$P(R|CI) = \frac{P(R \cap CI)}{P(CI)} = \frac{12/107}{14/107} = \frac{0.11}{0.13} = 0.86$$

The conditional probability of reprimand (R) given overseas isolated (OI) is given by:

$$P(R|OI) = \frac{P(R \cap OI)}{P(OI)} = \frac{22/107}{23/107} = \frac{0.21}{0.21} = 0.96$$

The conditional probability of reprimand (R) given non-isolated (NI) is given by:

$$P(R|NI) = \frac{P(R \cap NI)}{P(NI)} = \frac{50/107}{70/107} = \frac{0.47}{0.65} = 0.71$$

The unconditional probability of reprimand (R) is given by:

$$P(R) = \frac{84}{107} = 0.79$$

If relative isolation impacted reprimands then P(R|CI), P(R|OI), P(R|NI) and P(R) would all be different. They appear to be different, but again I must test for independence to determine whether or not to reject the null hypothesis, that there is no difference. The Chi-square test of independence answers this question (Table 11).

Table 11. Fraternization Consequences (observed and expected values)

	Reprimands	Dismissals
Actual CONUS Isolated	12	2
Expected	10.99	3.01
Actual Overseas Isolated	22	1
Expected	18.06	4.94
Actual Non-Isolated	50	20
Expected	54.95	15.05

Given the above values, a value for χ^2 can be determined.

$$\chi^2 = \frac{(12-10.99)^2}{10.99} + \frac{(22-18.06)^2}{18.06} + \frac{(50-54.95)^2}{54.95} + \frac{(2-3.01)^2}{3.01}$$

$$+ \frac{(1-4.94)^2}{4.94} + \frac{(20-15.05)^2}{15.05} = 6.508$$

With $\alpha = .10$, and (3-1)(2-1)=2 degrees of freedom, the critical value of the test statistic, χ^2_α is 4.605. The rejection region is $\chi^2 > \chi^2_\alpha$. Since $6.508 > 4.605$, I reject the null hypothesis. In addition, using EXCEL, I get a p-value = .0326, which means the probability of these differences due to random error is 3%. There is a 3% chance of getting a test statistic of this value assuming the null hypothesis is true. This is less than my acceptable rate for a type I error, therefore, I can conclude that there are changes in punishment due to changes in relative frequency of isolation.

Summary

The analysis performed in this chapter was limited to the available data. There were 14, 23, and 71 cases reviewed, distributed among CONUS isolated, overseas isolated, and non-isolated locations respectively. In analyzing some factors, information for some cases was not available. Comparing total numbers for each location in a given factor to total number of cases provides accurate information on how many cases were unknown within that factor. For example, in analyzing marital status, all CONUS isolated cases were known, 20 of 23 (87%) overseas isolated cases were known, and 63 of 71 (89%) non-isolated cases were known. In total, only 11 cases did not provide information about marital status. Conversely, in analyzing chain of command, only 9 of 14 (64%) CONUS isolated cases were known, 12 of 23 (52%) overseas isolated cases were known, and 37 of 71 (52%) non-isolated cases were known. In total, 51of 108 cases did not provide information about marital status.

In addition to missing data, the assumptions of the contingency table analysis state that it should not be used under the following conditions (Brightman, 1999, 407):

Table 12. Contingency Table Assumptions

2 x 2 Contingency Tables	Larger than 2 x 2 Contingency Table
Total Frequency < 20	More than 20% of the cells with expected frequencies < 5
20 < frequency < 40 and any expected frequency < 5	Any cell has expected frequency < 1
Frequency > 40 and any expected frequency < 1	

The contingency tables used in this analysis violated the assumption that no more than 20% of the cells should have expected frequencies less than 5. To address this violation, all data was reorganized into two by two contingency tables, with location classifications of CONUS and overseas isolated. The tests were run again and the results confirmed all original findings. Chain of command provided a p-value of .0068, while Punishment resulted in a p-value of .0239. All contingency tables, test statistics, and p-values are located in Appendix B.

In summary, three of the six tested hypotheses were supported. Statistically reliable differences were found in the unconditional probabilities of sexual/social and same/different gender, indicating support for Hypothesis 1. Statistically reliable differences were also found among the conditional probabilities of fraternization involving chain of command and severity of consequences given the relative isolation of the unit. These findings are further discussed in the final chapter.

V. Conclusion

Introduction

This chapter highlights the findings of this thesis. It presents an overview of the data analysis, including specific results of each hypothesis. Next it presents a discussion of the limitations. This is followed by the relevance of this research to the United States Air Force. Finally, this chapter recommends areas of future research.

Research Conclusions

The first hypothesis indicated that reported fraternization incidents are more likely to be of a sexual nature and involve different genders. A test of population proportions statistically supported both aspects of this hypothesis. This indicates that the 1997 change in Air Force policy intended to focus on sexual fraternization has successful. Senior leadership has issued memorandums dissuading commanders from pursuing "witch hunts" and this seems to be successful.

The second hypothesis, that social and sexual fraternization should have a higher relative occurrence at isolated locations than at non-isolated locations due to the fewer number of alternatives at isolated locations, was not tested. Frequency of occurrence based on reported incidents is not the same as frequency of occurrence. In addition, to actually examine frequency, base population would need to be compared actual incidents, which are unknown.

The third hypothesis stated that fraternization cases in non-isolated areas should be predominantly non chain of command, while chain of command should have no

impact on cases in isolated areas. This hypothesis was shown to be statistically accurate, especially at overseas locations. This confirms the idea that since there are less similar people in isolated locations, people tend to disregard chain of command, in both sexual and social relationships.

The fourth and fifth hypotheses indicated a higher percentage of unmarried people should be charged with fraternization, but there should be higher relative reporting of married people committing fraternization in isolated areas. Neither of these hypotheses was supported, which indicates that neither marital status nor relative isolation impacts fraternization. The probability that any differences are only due to random error was only 27.7%, which is not below the acceptable alpha level, but it is also not extremely high. A larger sample could impact these results.

The final two hypotheses involved nature of punishment from fraternization cases. Hypothesis 6 expected that isolated location would have more non-judicial punishments than judicial punishments. Qualitative analysis supported this theory, which implies that commanders at isolated locations are more lenient in punishing fraternization. It is likely that morale is a factor in this leniency. Further research could investigate the reasons for differences in punishment. Hypothesis 7 stated that there should be a higher relative occurrence of serious punishments in non-isolated locations than in isolated locations. This hypothesis was also statistically supported. Commanders in non-isolated locations are punishing fraternization cases more severely than commanders in more isolated locations.

The results of the final two hypotheses have some important implications. If commanders in isolated locations are indeed more lenient, Air Force member's views

could become tainted. People in isolated locations may experience or witness fraternization in higher levels and, as a result, become desensitized. When these people return to CONUS Non-Isolated locations, their distorted views could impact either their behavior or their stance, as commanders. In addition, if people in isolated locations are "getting away with" fraternization, returning to a non-isolated location could result in a rude awakening, especially in light of the findings to the seventh hypothesis.

Limitations

The primary limitation of this thesis is the difficulty in acquiring data. Due to Privacy Act regulations, in addition to limited legal records, cases resulting in Letters of Counseling, Admonishment, and Reprimand could not be accessed. Some bases were able to provide partial data from Letters of Reprimand. Freedom of Information Act (FOIA) allows access to what would normally be public data, with identifying information removed. Courts-Martial fall in to this category. Article 15s could also be accessed; however, bases are permitted to purge any information regarding non-judicial punishment once it is three years old. Therefore, non-judicial punishment has a limited life of analysis. The FOIA response received from AF/JA was not complete. This was apparent in the fact that of the 22 cases received from ACC bases, only 11 were also received from AF/JA. FOIA requests sent directly to bases provided more detailed accurate information. It must also be noted that only reported and charged cases could be analyzed. This thesis draws no conclusions about fraternization occurrences, only about reported incidents of fraternization.

Another limitation of this thesis is missing data. Some cases did not provide information about all of the factors analyzed. This resulted in smaller sample sizes for some factors. The missing data could impact the results. It is noted, however, that missing data tended to be proportionately distributed among all classifications of location. In the case of marital status, 14/14 (100%) of the CONUS Isolated cases were known, 20/23 (87%) of Overseas Isolated cases were known, and 63/71 (89%) of CONUS Non-Isolated cases were known. Nature of fraternization resulted in 78%, 73% and 70% of known cases for CONUS Isolated, Overseas Isolated, and CONUS Non-Isolated cases, respectively. Similarly, for Gender, 78%, 61%, and 66% of the cases were known. Chain of command was the most difficult factor to determine, though it was also proportionately distributed. CONUS Isolated, Overseas Isolated, and CONUS Non-Isolated provided 64%, 48%, and 52% of the needed data. Although one CONUS Non-Isolated punishment seemed to be missing, it was actually neither a reprimand nor dismissal. The missing data is attributed to an approved resignation in lieu of punishment, therefore, it could not be counted in the punishment data.

Recommendations for Future Research

As previously noted FOIA requests sent to individual bases warranted a better response than when sent to AF/JA. Based on the data that was available, overseas isolated locations tended to have a greater impact on fraternization than other locations. A more in-depth study of overseas locations would help to clarify some of the differences of fraternization in these areas. It is recommended that for future data collection FOIA requests be sent to individual bases, to ensure the most complete data possible.

Since analysis through FOIA requests is limited to reported incidents, it is recommended that other avenues of obtaining information be pursued. An anonymous survey of personnel could provide information about non-reported incidents as well as help to lend insight into people's attitudes regarding fraternization. Identifying apathetic attitudes about fraternization provides a basis for why commanders may be more lenient and personnel more tolerant in isolated locations.

Conclusion

In reality, fraternization will always exist, at least to some degree. Exploring the reasons people fraternize is the best way to help prevent it. As more studies uncover the motives behind fraternization, it will be easier for the Air Force to control it. Regardless of whether fraternization stems from social psychological tendencies, location characteristics, commander apathy, or some combination, understanding it is the best way to prevent it. Any research that will help to better define the factors contributing to fraternization would be worth while and beneficial to the U. S. Air Force.

Appendix A: Fraternization by Base

CONUS ISOLATED		CASES	Punish-ment		Marital Status		Chain of Command		Nature		Gender	
State	Base		REP	DIS	Mar	Not	Yes	No	Sex	Soc	Diff	Same
Tennessee	Arnold	-	-	-	-	-	-	-	-	-	-	-
California	Edwards	1	1	-	1	-	-	-	-	-	-	-
Missouri	Whiteman	2	2	-	-	2	1	1	1	1	2	-
Idaho	Mt Home	-	-	-	-	-	-	-	-	-	-	-
California	Beale	2	2	-	-	2	1	1	2	-	2	-
Florida	Patrick	3	2	1	3	-	1	1	2	1	2	1
Oklahoma	Altus	1	1	-	-	1	-	-	-	-	-	-
Mississippi	Columbus	-	-	-	-	-	-	-	-	-	-	-
New Mexico	Holloman	2	2	-	-	2	1	1	1	1	1	1
New Mexico	Cannon	-	-	-	-	-	-	-	-	-	-	-
Alaska	Eielson	-	-	-	-	-	-	-	-	-	-	-
Texas	Laughlin	-	-	-	-	-	-	-	-	-	-	-
N Dakota	Minot	2	2	-	2	-	-	-	1	-	1	-
Georgia	Moody	1		1	1	-	1		1	-	1	-
	Sub Total	14	12	2	7	7	5	4	8	3	9	2
FACTOR TOTAL				**14**		**14**		**9**		**11**		**11**

OVERSEAS		CASES	Punish-ment		Marital Status		Chain of Command		Nature		Gender	
Country	Base		REP	DIS	Mar	Not	Yes	No	Sex	Soc	Diff	Same
Gaum	Andersen	2	2	-	1	1	1	1	2	-	2	-
Italy	Aviano	2	1	1	-	1	1	-	1	-	1	-
Panama	Howard	3	3	-	1	2	3	-	2	1	2	1
Turkey	Incirlik	3	3	-	1	2	-	-	-	1	-	-
Japan	Kadena	-	-	-	-	-	-	-	-	-	-	-
S Korea	Kunsan	-	-	-	-	-	-	-	-	-	-	-
Portugal	Azores	-	-	-	-	-	-	-	-	-	-	-
Japan	Misawa	-	-	-	-	-	-	-	-	-	-	-
S Korea	Osan	1	1	-	-	1	-	-	1	-	1	-
U K	Lakenheath	5	5	-	2	3	-	-	3	-	3	-
U K	Mildenhall	2	2	-	1	1	2	-	1	1	2	-
Germany	Ramstain	1	1	-	-	-	1	-	-	1	-	-
Germany	Spang	2	2	-	-	1	-	-	-	1	-	-
Japan	Yokota	2	2	-	1	1	2	-	1	1	2	-
	Sub Total	23	22	1	7	13	10	1	11	6	13	1
FACTOR TOTAL				**23**		**20**		**11**		**17**		**14**

CONUS NON-ISOLATED		CASES	Punish-ment		Marital Status		Chain of Command		Nature		Gender	
State	Base		REP	DIS	Mar	Not	Yes	No	Sex	Soc	Diff	Same
S Carolina	Shaw	1	-	1	1	-	1	-	1	-	1	-
California	Vandenberg	1	-	1	-	-	-	-	-	-	-	-
Oklahoma	Vance	2	2	-	-	2	-	2	2	-	2	-
Wyoming	F.E. Warren	1	1	-	-	1	-	-	-	-	-	-
Montana	Malmstrom	2	-	2	1	-	-		1	1	1	-
S Dakota	Ellsworth	3	2	1	1	1	-	2	2	-	2	-
California	Travis	2	1	1	1	-	-	-	1	-	-	-
Texas	Goodfellow	1	1	-	-	-	1	-	-	-	-	-
N Dakota	Grand Forks	3	3	-	1	2	-	-	-	-	-	-
N Carolina	Sey John	3	3	-	-	3	1	2	3	-	3	-
Texas	Dyess	2	1	1	1	1	-	2	2	-	2	-
Deleware	Dover	-	-	-	-	-	-	-	-	-	-	-
Texas	Sheppard	2	2	-	-	2	-	-	-	-	-	-
Virginia	Langley	1	1	-	1	-	1	-	-	1	-	1
Florida	Tyndall	2	2	-	1	1	-	1	2	-	2	-
Florida	Eglin	-	-	-	-	-	-	-	-	-	-	-
Florida	Hurlburt	2	2	-	2	-	1	-	2	-	2	-
Alaska	Elmendorf	-	-	-	-	-	-	-	-	-	-	-
N Carolina	Pope	-	-	-	-	-	-	-	-	-	-	-
Georgia	Robins	-	-	-	-	-	-	-	-	-	-	-
Alabama	Maxwell	4	4	-	3	1	2	2	1	3	3	1
Mass	Hanscom	1	1	-	1	-	-	-	-	-	-	-
Mississippi	Keesler	1	1	-	-	-	-	-	1	-	1	-
Louisianna	Barksdale	4	3	1	1	3	2	1	3	1	3	1
Washington	Fairchild	4	3	1	1	2	1	2	3	-	3	-
Colorado	Shriver	-	-	-	-	-	-	-	-	-	-	-
Colorado	Peterson	1	1	-	-	1	1	-	-	1	1	-
Colorado	USAFA	-	-	-	-	-	-	-	-	-	-	-
S Carolina	Charleston	-	-	-	-	-	-	-	-	-	-	-
Kansas	McConnell	2	1	1	1	1	-	-	1	-	1	-
Arkansas	Little Rock	1	1	-	-	1	1	-	1	-	1	-
Washington	McChord	-	-	-	-	-	-	-	-	-	-	-
New Mexico	Kirtland	-	-	-	-	-	-	-	-	-	-	-
Nebraska	Offutt	-	-	-	-	-	-	-	-	-	-	-
Arizona	Davis-Mon	2	-	1	1	1	1	1	2	-	2	-
Hawaii	Hickam	1	1	-	1	-	-	-	-	-	-	-

CONUS NON-ISOLATED (continued)

Ohio	Wright-Patt	1	1	-	1	-	-	-	1	-	1	-
Oklahoma	Tinker	2	2	-	1	1	-	1	1	-	1	-
Nevada	Nellis	2	-	2	2	-	-	-	2	-	2	-
Utah	Hill	1	1	-	-	1	-	1	-	1	-	1
Texas	Brooks	-	-	-	-	-	-	-	-	-	-	-
Texas	Kelly	1	1	-	-	1	-	1	1	-	1	-
Texas	Lackland	2	1	1	2	-	1	1	1	1	1	1
Texas	Randolph	-	-	-	-	-	-	-	-	-	-	-
California	McClellan	3	2	1	1	1	-	-	-	1	-	-
Florida	MacDill	-	-	-	-	-	-	-	-	-	-	-
Illinois	Scott	4	-	4	4	-	2	2	4	-	4	-
Arizona	Luke	-	-	-	-	-	-	-	-	-	-	-
New Jersey	McGuire	1	1	-	1	-	-	-	-	-	-	-
Maryland	Andrews	2	2	-	1	1	-	-	1	-	1	-
D.C.	Bolling	3	2	1	3	-	-	-	1	-	1	-
California	Los Angeles	-	-	-	-	-	-	-	-	-	-	-
	Sub Total	71	50	20	35	28	16	21	40	10	42	5
FACTOR TOTAL				**70**		**63**		**37**		**50**		**47**

Appendix B: Contingency Tables

Nature (actual cases)

	Sexual	Social	Total
Overseas Isolated	11	6	17
CONUS	48	13	61
Total	59	19	78

Nature (expected values)

	Sexual	Social	Total
Overseas Isolated	12.86	4.14	17
CONUS	46.14	14.86	61
Total	59	19	78

$$\chi^2 = \frac{(11-12.86)^2}{12.86} + \frac{(6-4.14)^2}{4.14} + \frac{(48-46.14)^2}{46.14} + \frac{(13-14.86)^2}{14.86} = 1.411$$

The rejection region is $\chi^2 > \chi^2_\alpha$. Since $1.411 < 4.605$, I fail to reject the null hypothesis. In addition, using EXCEL, I get a p-value = .2349, which means the probability of these differences due to random error is 23.49%.

Gender (actual cases)

	Different	Same	Total
Overseas Isolated	13	1	14
CONUS	51	7	58
Total	64	8	72

Gender (expected values)

	Different	Same	Total
Overseas Isolated	12.44	1.56	14
CONUS	51.56	6.44	58
Total	64	8	72

$$\chi^2 = \frac{(13-12.44)^2}{12.44} + \frac{(1-1.56)^2}{1.56} + \frac{(51-51.56)^2}{51.56} + \frac{(7-6.44)^2}{6.44} = .2771$$

The rejection region is $\chi^2 > \chi^2_\alpha$. Since $.2771 < 4.605$, I fail to reject the null hypothesis. In addition, using EXCEL, I get a p-value = .5986, which means the probability of these differences due to random error is 59.86%.

Chain of Command (actual cases)

	Chain	Not	Total
Overseas Isolated	10	1	11
CONUS	21	25	46
Total	31	26	57

Chain of Command (expected values)

	Chain	Not	Total
Overseas Isolated	5.98	5.02	11
CONUS	25.02	20.98	46
Total	31	26	57

$$\chi^2 = \frac{(10-5.98)^2}{5.98} + \frac{(1-5.02)^2}{5.02} + \frac{(21-25.02)^2}{25.02} + \frac{(25-20.98)^2}{20.98} = 7.3293$$

The rejection region is $\chi^2 > \chi^2_\alpha$. Since 7.3293 > 4.605, I reject the null hypothesis. In addition, using EXCEL, I get a p-value = .0068, which means the probability of these differences due to random error is 6.8%.

Marital Status (actual cases)

	Married	Unmarried	Total
Overseas Isolated	7	13	20
CONUS	42	35	77
Total	49	48	97

Marital Status (expected values)

	Married	Unmarried	Total
Overseas Isolated	10.10	9.90	20
CONUS	38.90	38.10	77
Total	49	48	97

$$\chi^2 = \frac{(7-10.10)^2}{10.10} + \frac{(13-9.90)^2}{9.90} + \frac{(42-38.90)^2}{38.90} + \frac{(35-38.10)^2}{38.10} = 2.4263$$

The rejection region is $\chi^2 > \chi^2_\alpha$. Since 2.4263 < 4.605, I reject the null hypothesis. In addition, using EXCEL, I get a p-value = .1193, which means the probability of these differences due to random error is 11.93%.

Punishment (actual cases)

	Reprimands	Dismissals	Total
Overseas Isolated	22	1	23
CONUS	62	22	84
Total	84	23	107

Punishment (expected values)

	Reprimands	Dismissals	Total
Overseas Isolated	18.06	4.94	23
CONUS	65.94	18.06	84
Total	84	23	107

$$\chi^2 = \frac{(22-18.06)^2}{18.06} + \frac{(1-4.94)^2}{4.94} + \frac{(62-65.94)^2}{65.94} + \frac{(23-18.06)^2}{18.06} = 5.1050$$

The rejection region is $\chi^2 > \chi^2_\alpha$. Since $5.1050 > 4.605$, I reject the null hypothesis. In addition, using EXCEL, I get a p-value = .0239, which means the probability of these differences due to random error is 2.39%.

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13. ABSTRACT (*Maximum 200 Words*)

The purpose of this study is to analyze any differences in reported incidents of fraternization based on relative isolation of location. To fulfill this purpose, a variety of types of fraternization cases were reviewed and analyzed. All data extracted was coded across five factors of fraternization and punishment. Statistical tests determined whether differences in fraternization factors were due to common error or to true differences based on relative isolation of location.

Seven different hypotheses relating fraternization and location were tested. Statistical analysis showed that reported fraternization incidents are more likely to be of a sexual nature and involve people of different genders. In addition, fraternization cases in isolated areas are more likely to involve members within the same chain of command. The data also showed that isolated locations have a higher relative occurrence of non-judicial punishment, while fraternization in non-isolated locations is more likely to result in judicial punishment (dismissal resulting from court-martial).

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