

**EFFECT OF CONSEQUENCE ON
EQUILIBRIUM: HOW PERSISTENT GROUPS
MAINTAIN EQUILIBRIUM IN
HIGH-STAKES ENVIRONMENTS**

by

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of the requirements for the degree of Master of Arts in Communication

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ABSTRACT

The purpose of this study was to expand on previous theories of small group communication by applying them to groups that exist outside of a given task. These groups were involved in high-stress situations as well to delineate between when they were working on a task and when they had downtime between tasks. This was accomplished via survey of groups participating in ROTC training who self-reported types of messages sent and received, team structure, and stress caused by time pressure and individual perceptions.

Chapter 1

BASIS

Group communication research has been very expansive in its exploration of factors influencing group performance. Time limitation, communication patterns, and goal-setting are major areas that have been explored, usually in relation with each other and to group performance. Time limitation causes group performance to suffer (Karau & Kelly, 1992) as groups focus more on elements of the task considered absolutely essential and shift interactive objectives. This produces differences in discussion content and information seeking behaviors, because of the prioritization of certain tasks and subsequent neglect of stress management, changing group performance. Communication patterns have a major impact on group performance because of how messages flow; in some situations, a group that communicates across all members, also known as a non-centralized group, will perform faster than a centralized group, which only allows communication through certain members. On the other hand, centralized groups may work better with certain tasks that require multiple inputs to make the product work. Goal-setting focuses a group on what they want to accomplish; by establishing individual goals and then sharing them within the group, the group decides on priority tasks and information-seeking strategies.

Much of this research makes use of Bales's theory of equilibrium (Bales, 1953). Bales's theory establishes that groups work in a two part cycle: task-

related communication and social maintenance communication. The task-related communication half of the cycle produces the actual results the group is looking for but it also causes a buildup of tension among group members. Therefore, groups enter the social maintenance half of the cycle, using communication to release tension and increase group cohesion. This part of the cycle focuses on comments inputted into the group and received as positive or negative feedback. For a group to properly maintain cohesion and equilibrium, it is crucial that the ratio of positive to negative comments be at least 3:1. By looking at the content of the group's communication, Bales found that this ratio or a higher one is ideal for social maintenance.

Very few researchers have tried to expand Bales's theory. However, there is definitely room to expand. This study's goal is to look at some of the elements other researchers have introduced and how those elements impact Bales's theory. For instance, time limitation and group communication patterns have a major effect on group performance; this changes how Bales's model of equilibrium works to account for group performance. Time limitations introduce stress on group members, which increases the need for social maintenance. Group communication patterns change how these messages are sent and received, which can add or reduce stress based on individual group member characteristics. This study hypothesizes how these included stresses changes how Bales's cycle occurs.

Time Limitations

Karau and Kelly's (1992) Attentional Focus Model (AFM) set the foundation for analyzing the effect of time limits on group performance. Building on Isenberg (1981) and Kelly and McGrath (1985), the AFM attempted to explain how time limitation affects group performance. Karau and Kelly's (1992) work showed

that there is negative impact on either extreme: too much time causes a lack of focus on, and inability to balance, task work with social maintenance messages; whereas too little time causes the group to focus near exclusively on task-oriented messages and loses its ability to maintain its cohesion as tension mounts. Looking at the model through Bales's lens, the abundance or scarcity of time on the equilibrium cycle causes an imbalance of the ratio between task-oriented communication and social maintenance. Figure 1.1 and Figure 1.2 show how this imbalance would occur.

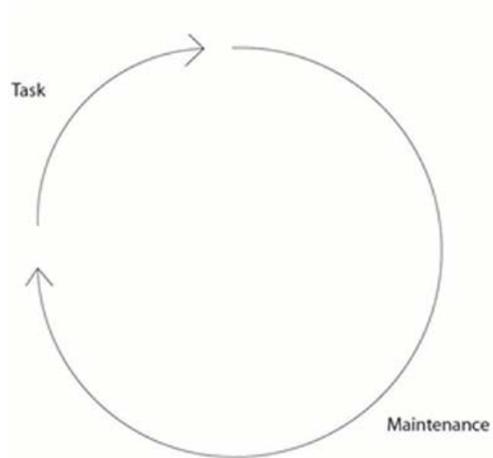


Figure 1.1: Long Time Limit

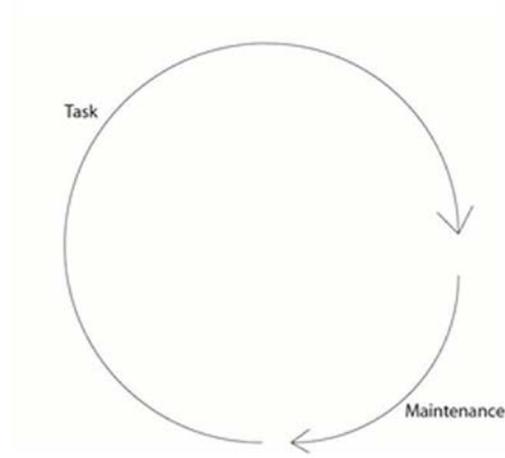


Figure 1.2: Short Time Limit

In later work, Kelly and Karau (1999) expanded the AFM to look at the impact of initial individual preferences and time pressure on group performance. Kelly and Karau used the hidden profile paradigm (Stasser and Titus, 1985) to measure initial preferences versus group preferences. The hidden profile paradigm states that groups have two types of information at their disposal: shared and unshared information. Shared information is knowledge that multiple members, if not all, have

about the task or subject. Unshared information is knowledge individual members alone have about the task or subject. Research using the hidden profile paradigm establishes that group information seeking patterns are affected by the ratio of shared versus unshared information there is within the group, the accuracy of the information shared, member preferences and bias towards information, and the extent to which it affects group decisions.

Kelly and Karau (1999) used this paradigm by varying the shared and unshared information among group members and measuring the accuracy of group decisions. Their study found that in terms of initial preferences (bias) and communication features, groups focused on the relevant information that was shared and was related to final decisions. Time pressure enhanced overall work rate and the effect initial bias had on final decisions but did not have significant effect on information sharing patterns. Thus, in terms of Bales's theory, it may be assumed that the presence of a time limit will not affect task communication content but keeps the group focused on task work over social maintenance, as seen in Figure 1 earlier.

The AFM (Karau & Kelly, 1992) led to several studies expanding the role and the specific elements that make up the pressures of having a time limit. Waller, Conte, Gibson, and Carpenter (2012) suggested two factors in the perceptions of time. The first perception, urgency, is defined by an individual's awareness of time passing, prioritization of remaining tasks, and task scheduling. Time urgent individuals are constantly watching the clock, have a high work pace, and use deadlines as heuristics. Non-time urgent individuals underestimate the time necessary for task completion and maintain a stable work pace regardless of deadline specifics. The second perception, perspective, concerns how individuals focus on past, present,

or future times as frames. This affects subsequent actions and choices, with individuals in a group feeling different pressures depending on how they perceive time flow.

Waller et al. (2002) formulated four team roles from this perception of time: the visioner (future perspective and low urgency), the organizer (future perspective and high urgency), the relator (present perspective and low urgency), and the crammer (present perspective and high urgency). These roles differ not only in approach to handling of time and tasks but also in personality and how they interact with other group members. Bales's theory of equilibrium implies differences in the type of communication each of these roles is likely to put out and receive. For instance, the relator focuses on current tasks and relational issues within the group but pays little attention to time. On the other hand, the organizer is highly aware of time limits and focuses nearly exclusively on task functions. The visioner compliments these two by providing ideas for the organizer to work on while working well with the relator who is balancing the group members. The type of influence the crammer provides depends on when in the discussion process it occurs. At the start of the group's cycle, the crammer is a major detractor in task work, causing all members of the group stress and increasing the workload of the relator. At the end of a group's maintenance cycle, crammers may be of use in completing remaining tasks quickly but can also cause problems socially with their high urgency. Effectively, the crammer complicates the equilibrium of the group. The roles each individual takes set the flow of Bales's model, making the cycle dependent on their perception of time and the degree of balance or imbalance in the roles filled by the team members.

Communication Patterns

The way a group organizes itself plays a large part in its performance. As explained by Leavitt (1951), a group's centrality determines how members communicate and the length of time it takes for messages to be received by their intended recipient. Centrality is how uniquely defined a group's message channels are between members; more centralized groups have channels between specific members whereas less centralized groups allow messages to flow between most or all members. The group's dynamic is defined by its structure. Leavitt defined four different structures, within the context of five member groups. The most decentralized structure Leavitt employed is the "circle," in which each group member is able to communicate with any other member in the group without having to go through other members. This is followed by the "chain," in which group members on the outermost positions must communicate through intermediate members to reach the central member or members on the other side of the chain. Next is the "Y" pattern, in which three members have direct contact to the central position but one or more members must go through another member to reach that position or other branches. Finally, the most centralized pattern is the "wheel", in which all members but one are on individual spokes and must communicate through a central member to reach other members. Leavitt explored how each pattern affected communication efficiency, finding that the "Y" pattern, or some variant of it, is a good balance of efficiency versus communicative ability between the two extremes.

Leavitt's work has been influential in other fields as well. Medical researchers have examined how emergency response teams respond to high-stress situations, how they organize, and how their communication patterns change based on the needs of the situation. Horst, Hunter, Jefferies, Mackenzie, and Xiao (1996)

explored how task urgency affects the team communication patterns and response time. These researchers provided a breakdown of task urgency into multiple categories – patient status, technical difficulty of the task, amount of available patient monitoring information, and work pace – and how each category affects team coordination and communication in high and low urgency situations. High urgency situations were often low in patient monitoring information, due to inability either to set up monitors (patient unresponsive or combative) to collect direct information (patient unable to give medical history or how injury was sustained). Teams had to adapt in higher urgency cases to multiple attempts at resuscitation and more difficult tasks. The study showed that high urgency status caused a significantly shorter response time but also a higher number of tasks omitted to carry out to intubation (admittance of patient for surgery). In higher urgency cases, team members also concurrently performed other vital tasks (normalization and stabilization), making teams more decentralized. However, within the communication structure, higher urgency cases were more defined in their structure, with junior members communicating through the senior members to the team leader. Junior members performed more communication episodes, or messages, in low urgency situations. Additionally, they communicated more with the team as a whole. The study proposed a comprehensive training covering suggested team response task complexity and situational differences.

Xiao, Seagull, Mackenzie, Klein, and Ziegert (2002) looked at the structure of trauma resuscitation teams (TRTs) during the first 30 minutes of a patient's admission to the trauma center, the most intensive period of the resuscitation process. They found that there was some adaption of team structure in response to

task urgency but a continued preference for maintaining a hierarchy based on the “Y” pattern. Based on their observations, the authors proposed a set of four variations of the “Y” pattern (“archetypes”) for teams to use differing in frequency of communication and structure of the hierarchy between the leader and the senior member of the teams. In each archetype, the leader of each team had the most communication with the senior member, who disseminated information to the junior members. They also observed how structures adapted to high urgency and low urgency cases; the more urgent care a patient needed, the more senior members were directly involved and taking command. In cases where the patient had low urgency injuries, junior members would act as the main caregivers and seek advice or approval from senior members.

Xiao, Seagull, Mackenzie, Ziegert, and Klein (2003) built on the observations of the 2002 study by looking at the same TRTs and team communication patterns in high and low urgency situations along with the team level of shared experience. Building on the archetypes proposed in the previous article, this study investigated how verbal communication patterns among team members would predictably change in response to task urgency and shared experience. In order to describe the adaptive structure of teams in complex situations, the authors mapped out both the overall communication pattern and differences in these patterns when urgency and experience were taken into consideration. Higher task urgency lowered the frequency of communication between the leader and the junior members of the team while greater experience lowered the frequency of communication between the leader and all members of the team. Effectively, a more experienced team needs less input from its leader and higher task urgency causes junior members to seek the closest

available input, usually the senior member. Members became semi-autonomous, continuing to communicate along the Y pattern with nearly exclusively task content. This can be attributed to the experience levels of the members of the team and their ability to adapt the team's skills to the situation, creating the change in actual communication structure, as shown in Figure 1.3.

Figure 1.3 – Task Work Structure

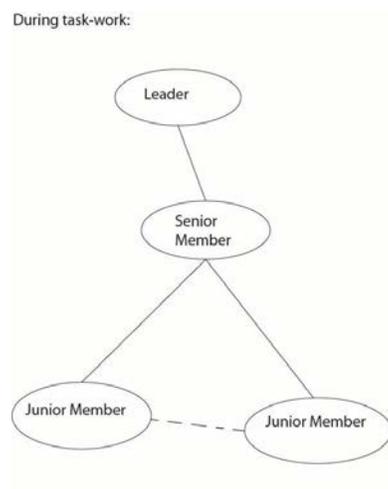
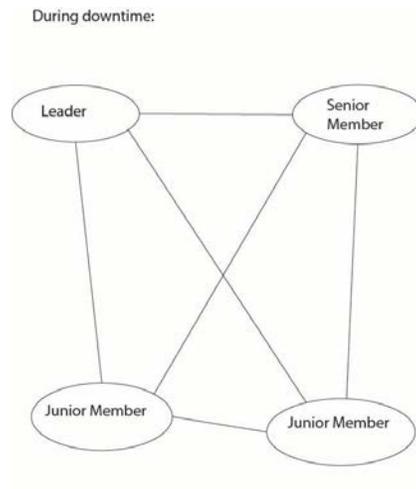


Figure 1.4 – Downtime Structure



In low urgency situations, the team had more communication among all members and was better able to provide feedback with non-task related messages. This enabled the low urgency teams to maintain equilibrium. Referring to Figure 1.4, the effect of urgency on communication patterns is important for two reasons: first, it establishes how groups manage communication and their content in both high and low urgency situations; and two, in conjunction with Bales's theory of equilibrium, it shows how those situations cause groups to focus on task functions (high urgency) or a more balanced approach (low urgency). Based on this speculation, groups with a

high urgency task will follow the model from Figure 1, with relatively little social maintenance. Groups with low urgency will more likely follow the original model with a balanced cycle.

Returning to Waller et al. (2002), if one imagines the “ideal mix” of the four roles the study established, another useful pattern that aligns with Bales’ theory appears. The future perspective roles (organizer and visioner) work well in developing task messages and reorienting the group, with the visioner fulfilling the task leader role and the organizer being a secondary. The relator fulfills the social leader role, as this position is the most concerned with member relations and sustaining group cohesion. Having a crammer is a mixed blessing, as it helps with task completion but can serve as a major source of stress for the whole group. The crammer’s usefulness is based on the relator’s ability to manage the stress that the crammer creates. If the relator is able to do so, then the crammer is able to contribute both to task work and social maintenance. If not, the crammer can contribute to task work but negatively affects social maintenance. As a consequence, group composition determines the group’s equilibrium.

Durham, Locke, Poon, and McLeod (2000) provides the most comprehensive explanation of problem-solving strategy’s impact on team performance under time pressure. The study builds on previous research stating that team-set goals, or what the team wants to accomplish, increase the use of training, planning, and importance of strategy for maintaining performance when working on complex tasks. Durham et al. examined how team goal setting and time pressure affected information seeking behavior. Previous research cited in the study laid out multiple strategies: increase efficiency in information seeking/processing, be selective in information

processed, and change strategies to something simpler if the pressure is increasing. Pressure also leads to a reduction in information seeking, consistently with the AFM (Kelly & Karau, 1999), although Durham et al. referred to outside sources instead of unshared information. Finally, the impact of group efficacy, or the group's ability to perform tasks, was hypothesized to indirectly and positively affect both goal-setting and information-seeking behavior.

In their research, Durham et al. (2000) observed that information seeking behavior positively influenced, but time pressure had almost no impact, on group performance. Perceived time pressure slightly reduced group efficacy but had no effect on information seeking behavior. This affected group goal-setting as efficacy declined and goal-setting tactics of the group diminished due to conflict. Overall, problem solving was mostly defined by the group's self-defined goals and efficacy rather than pressure from time. This may have an even larger impact on groups that exist beyond one specific tasks, as group members determine their individual involvement before and after each task.

Chapter 2

HYPOTHESES

Nearly all small group communication research has looked at experimental groups that were formed solely for the assignment put forth in a research study. These groups meet only once and disband at the end of the research session. There is no continuance of the group beyond the initial task; Bales (1953) and others such as Karau and Kelly (1992) observed groups made of volunteers to whom they posed questions or problems. In contrast, in most businesses or government jobs, teams persist after the first task is completed; either the group is assigned a new task or they develop a project on their own. Also, these groups may continue their cohesion outside of the workplace. For example, in the case of a disaster relief team, volunteers may meet and discuss when not responding to an emergency or meet for a social event as a team building exercise.

The accomplishment of group equilibrium for teams that mobilize for a task and have a large amount of down time in between tasks should differ from that for experimental groups. As noted in the AFM (Karau & Kelly, 1992), these teams focus mainly on task communication during high-time pressure tasks. Now, how do they fulfill the social maintenance part of the cycle? I hypothesize that these permanent groups maintain equilibrium by using downtime between tasks for social maintenance communication. The content may still relate to prior tasks, especially if it is a debriefing, but it is not for the purposes of completing tasks.

Hypothesis 1: Permanent groups focus on task work exclusively during task.

Hypothesis 2: Permanent groups go through the social maintenance phase during downtime between tasks.

Further, as shown in previous research, degree of time urgency can negatively affect performance if it creates either too much or too little pressure on the group. The stress of the task also has an effect on group performance. Higher stress tasks limit social maintenance functions and make the group resemble Figure 1. Lower stress tasks cause the group to function either in equilibrium or as in Figure 2.

In addition, this study proposes a third variable: task consequence. In emergency situations, as seen earlier (Xiao et al. 2002), the group's ability to complete its task within the time limit has definite impact on the group's communication. This is especially important for permanent groups that may complete the social maintenance phase of the equilibrium cycle after their task is completed. Said groups would have to consider how they achieved or failed their goal, and in the latter case, how to continue to perform or avoid the same issues that caused their failure.

Using the example of task stress, I would predict that groups that are successful in completing their tasks within the time limit set would have more positive messages and a greater positive/negative ratio for social maintenance. Conversely, a group that has failed to complete their task within the time limit will discuss those issues and will have a higher ratio of negative to positive comments, upsetting the group equilibrium. In effect, a higher achievement rate will indicate a more successful social maintenance cycle.

Hypothesis 3: The greater the group's achievement rate for task consequence, the higher the positive to negative message ratio in the subsequent social maintenance cycle.

This hypothesis implies a new equilibrium model for permanent groups. This is demonstrated in Figure 2.1.

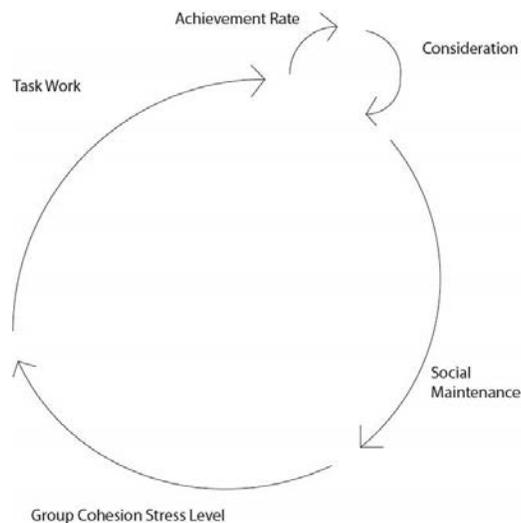


Figure 2.1 – New Equilibrium Model

It is also important to consider the effects of individual time urgency roles (Waller, Conte, Gibson & Carpenter, 2001) and group communication structures (Xiao et al., 2002) on these teams. As mentioned earlier, individual members of the group are affected by time pressure in different ways; thus, they fall into different work methods or roles (Waller et. al, 2001). In the context of permanent groups, these roles will have different impacts on the group's performance and task consequence.

Hypothesis 4: The higher the time urgency when performing the task, the greater the attention to task work.

Hypothesis 5: The higher the time urgency when performing the task, the lower the attention to social maintenance.

As Xiao et al. (2002) has shown, teams in a high-stress situation will stick to a particular pattern in which members will communicate along strict lines with superiors and other members. In most scenarios, the team formed a “Y” pattern, with communication being restricted between only the junior and senior members and their supervisor. Junior members rarely communicated with each other. With permanent groups, I would expect the same scenario to occur during task work; however, in between tasks, when the expected social maintenance will occur, permanent groups will likely followed a more decentralized pattern, such as the “circle” pattern. This is expected due to two reasons: one, Bales (1953) suggested that groups have two leaders, a social leader and a task leader, with the social leader performing his or her role during low urgency situations and not during high urgency situations; and two, the lack of time pressure during off-task time will reduce the need for task-only communication, leaving room for non-task communication.

Hypothesis 6: Permanent groups will follow a centralized pattern of communication during task work and will follow a decentralized pattern when off-task.

Chapter 3

METHOD

Overview

The general purpose of this study is to determine if permanent groups communicate differently when they are on-task and off-task. ROTC students answered questions about the equilibrium of the group, team members' individual preferences and roles, and the teams' communication structures.

Measures

Students were given a 109 item survey that begins with 3 demographic questions relevant to gender, age, and rank. Rank was requested to give insight into levels of command recipients had.

An adaptation of Bales's coding scheme (1953) was created in order to develop a 15 category survey with each category measured by six items, three relevant to task and three to downtime. Twelve of these categories are based on Bales's original coding scheme, measuring positive and negative messages, questions, and attempted answers. Each item was on a 10 point Likert-type scale: 1=Never, 2=Very Little, 3=Little, 4=Somewhat, 5=Average, 6=Above Average, 7=Usually, 8=Often, 9=Nearly Always, and 10=Always. The other three categories (consideration, task importance, and time stress) were developed to measure task consequence variable that was introduced. Consideration measured how individuals reflected on their

actions and possible consequences. Task importance determined individual prioritization of assigned tasks and time stress reflected individual perception of time and self-reporting of impact on behavior. Table 3.1 details each of the categories.

Table 3.1	Categories of Messages		
Bales' Categories			
Categories	Sub Categories	Description	Modification
Positive Responses			
	Solidarity	gives help/reward; show of support for team	Clarify roles within team
	Tension Release	jokes, laughter, satisfaction	ask if this happens during debriefing or if there is anything during missions
	Agreement	acceptance and understanding of messages	
Negative Responses			
	Disagreement	rejection of messages or withholding help	
	Shows Tension	asks for assistance, withdraws from field	Clarify this to avoid combat stress (this should more revolve around withdrawal from group)

	Antagonism	asserts self, degrades other's status	Clarify for asserting self outside of combat/mission (when there is not a need for a leader's assertion)
Attempted Answers			
	Gives Suggestion	directions or implied autonomy for another	
	Gives Opinion	evaluation or analysis	
	Gives Orientation	information, clarification, confirmation	
Task Questions			
	Ask for Suggestion	request for possible ways of action, direction	
	Ask for Opinion	request for analysis, personal thoughts	
	Ask for Orientation	request for directions, repetition, confirmation	
(NEW CATEGORY): Task Consequence			
	Consideration	knowledge and analysis of impact of task	
	Risk/Reward	importance of task in mission and yield of results	
	Time Stress	Influence of time consideration and risk/reward on individual	

Table 3.2	
Time Urgency and Time Perspective Items	
Question	Purpose
1. I take my time to accomplish tasks.	Low Time Urgency/Future Perspective
2. I feel pressed for time when I am working.	High Time Urgency/Present Perspective
3. I tend to talk quickly.	High Time Urgency/Present Perspective
4. I feel it is easier to plan out my day.	High Time Urgency/Future Perspective
5. I work best under pressure.	High Time Urgency/Present Perspective
6. I need to be able to take my time.	Low Time Urgency/Present Perspective
7. I don't pay attention to the clock when I am working.	Low Time Urgency/Future Perspective
8. I have a habit of procrastinating.	Low Time Urgency/Present Perspective
9. I like to have a lot of responsibility.	High Time Urgency/Future Perspective
10. I'm used to doing things in a hurry.	High Time Urgency/Present Perspective

In addition, the survey also contains ten items used in determining individual team roles by Waller et al. (2002) based on questions from Landy, Rastegary, Thayer, and Colvin (1991). These ten items establish individual's time urgency and time perspective. These items were on a six point Likert-type scale: one equals never, two equals rarely, three equals less occasionally, four equals more occasionally, five equals often, and six equals always. The reasoning behind this scale was to for respondents to self-report their perspective on their problem-solving and time management abilities. This determines what role they fill. Table 3.2 details these items. Finally, six questions were used to establish individual's channels of communication during taskwork and off-task time to identify team communication structures.

Table 3.3			
Cronbach's Alpha for Survey Questions			
Item	Cronbach's Alpha	Changes	Interpretation
Solidarity in Downtime	0.562		Poor
Solidarity in Task	0.923	deleted T-2	Excellent
Tension Release in Downtime	0.636	deleted T-2	Questionable
Tension Release in Task	0.694	deleted T-3	Questionable
Agreement - Task	0.772		Acceptable
Agreement - Downtime	0.767		Acceptable

Giving Orientation - Task	0.647	deleted T-3	Questionable
Giving Orientation - Downtime	0.491	deleted T-2	Unacceptable
Giving Suggestions - Task	0.308		Unacceptable
Giving Suggestions - Downtime	0.788		Acceptable
Giving Opinion - Task	0.838		Good
Giving Opinion - Downtime	0.815	deleted T-1	Good
Ask for Orientation - Task	0.298	deleted T-1	Unacceptable
Ask for Orientation - Downtime	0.458	deleted T-1	Unacceptable
Ask for Opinion - Task	0.834		Good
Ask for Opinion - Downtime	0.402	deleted T-3	Unacceptable
Ask for Suggestion - Task	0.553	deleted T-2	Poor
Ask for Suggestion - Downtime	0.722	deleted T-2	Acceptable
Disagreement - Task	0.410		Unacceptable
Disagreement - Downtime	0.124	deleted T-2	Unacceptable

Shows Tension - Task	0.358	deleted T-3	Unacceptable
Shows Tension - Downtime	0.787	deleted T-1	Acceptable
Antagonism - Task	0.795	deleted T-1	Acceptable
Antagonism - Downtime	0.678	deleted T-1	Questionable
Consideration - Task	0.560	deleted T-2	Poor
Consideration - Downtime	0.668		Questionable
Risk/Reward - Task	0.139	deleted T-2	Unacceptable
Risk/Reward - Downtime	0.621	deleted T-1	Questionable
Time Stress - Task	0.637		Questionable
Time Stress- Downtime	0.400	deleted T-1	Unacceptable

All items were combined into scales, with reliability measured by Cronbach's Alpha, shown in Table 2A. Multiple questions were deleted in order to raise the Cronbach's Alpha to acceptable levels. Table 3.3 lists the Cronbach's Alpha along with which questions were deleted to raise it.

A major issue with this study is the low Alpha many questions have. Only four questions are above the .8 threshold for acceptable reliability. This will have an effect on the results and subsequent discussion. This is especially true for the time urgency questions using Waller et al.'s scale (2002). A factor analysis was used to determine correlations within the group of time urgency questions. The principal

axis analysis yielded a three factor solution, or three factors with an eigenvalue greater than 1. As noted in Table 2A, questions 6 and 8 load much higher on the second factor; removing these two questions raises the Cronbach's Alpha from .831 to .857. This leads to no distinction between high and low urgency questions; the overall scale is 8 out of 10 questions with a .857 alpha. The time structure questions suffer more distinctly; as two-item scales, task and downtime, the Cronbach's Alpha was .063 and .745 respectively.

Participants

As mentioned previously, this study requires groups that exist outside of a task function but still have the potential for group communication and activity. Teams would perform high-stress tasks and then have downtime in between those tasks.

The University of Delaware Army ROTC agreed to allow cadets to participate in the study. Their cadets are a good sample because of their training program. Cadets are sent to training with cadets from other universities and go through exercises as teams. These exercises can be considered high-stress tasks. The cadets are also given downtime during the training period, which is usually one to two months, during which they can get to know the other cadets. After the training period is over, they return to their respective universities to continue their studies. The downtime during training and the long period of downtime between training sessions are ideal times to maintain group cohesion.

In addition, the reservists at the ROTC were authorized by the captain at the ROTC to answer the survey. These reservists are responsible for training the cadets. They fulfill the role of the superior analogous to that of the leaders in the

trauma teams described in the communications patterns section. Since they also participate in the training periods, they are able to answer the same items regarding team equilibrium and individual roles and preferences.

The survey was distributed to 75 members of the University of Delaware ROTC. Respondents were approximately 50 cadets in training with 25 reservists. In addition, the survey was distributed to a recent graduate of the MIT Navy ROTC along with her current team members, who are currently completing their training. This added an additional 10 respondents, bringing the total up to 85 potential respondents. The Navy ROTC program works in the same manner as the Army ROTC, so there are no conflicts in communication dynamics.

Chapter 4

RESULTS

A total of 40 responses was collected, 17 of which were fully complete responses. 15 of the respondents were male, two were female; their age range was 18 to 21. The ranks of the respondents ranged from private (MS1) to cadet captain (C/CPT).

For hypotheses 1 and 2, respectively stating that permanent groups focus on task work exclusively during task and go through the social maintenance phase during downtime between tasks, a one-sample t test was used to compare individual respondent scores on two variables to note the difference between task and maintenance.

Table 4.1				
Hypothesis 1 & 2				
Paired Samples	Downtime Mean	Task Mean	t (df = 15)	Sig
Consideration	6.35	7.44	-3.88	0.001
Solidarity	6.44	8.28	-4.06	0.001
Time Stress	7.44	6.65	2.82	0.013
Ask Orientation	7.09	6.03	2.94	0.010
Give Orientation	7.91	8.59	-2.42	0.029

Show Tension	3.50	6.75	-4.88	0.000
Tension Release	5.78	7.94	-4.43	0.000
Show Agreement	7.92	8.67	-2.07	0.057
Ask for Opinion	6.53	5.79	1.83	0.087
Show Disagreement	3.47	3.79	-1.04	0.315
Gives Opinion	6.40	6.65	-0.55	0.591
Gives Suggestion	6.46	6.77	-1.03	0.322
Shows Antagonism	2.94	2.38	1.84	0.086
Asks for Suggestion	6.34	5.78	1.05	0.312
Risk/Reward	5.88	4.91	2.00	0.064

Of the fifteen variables, seven are significant: consideration ($t=-3.88$, $df=15$, $p<.05$), solidarity ($t=-4.06$, $df=15$, $p<.05$), time stress ($t=2.82$, $df=15$, $p<.05$), asking for orientation ($t=2.94$, $df=15$, $p<.05$), giving orientation ($t=-2.42$, $df=15$, $p<.05$), showing tension ($t=-4.88$, $df=15$, $p<.05$), and tension release ($t=-4.43$, $df=15$, $p<.05$). H1 is partially supported; both consideration and solidarity have negative t , meaning they appeared more during task time. However, the other two task variables, time stress and asking for orientation, were positive, meaning they were prevalent during the maintenance cycle. H2 is not supported, as all three significant downtime variables, giving orientation, showing tension, and tension release, had negative t , and were more apparent during task time.

Hypothesis 3 posits that the greater the group's achievement rate for task consequence, the higher the positive to negative message ratio in the subsequent social maintenance cycle. The message ratio variable consisted of the difference between positive (agreement, shows solidarity, and tension release) and negative (disagreement, shows antagonism, and shows tension) messages during downtime; the task consequence variable averaged consideration, task importance, and task consequence. Although the correlation is in the predicted direction, it fails to reach significance ($r = .31, p = .25$).

For Hypothesis 4, the higher the time urgency, the greater the attention to task work, and Hypothesis 5, the higher the time urgency, the lower the attention to social maintenance, a correlation test was run with the fifteen items for task time and downtime. For the former, as shown in table 4, out of the six task work categories, only asking for suggestion was significant ($p < .05, r = -0.520$), and in the wrong

Table 4.2		
H4 & H5 - Time Urgency Impact on Taskwork and Social Maintenance		
H4 - Task Time Correlation with Time Urgency	Correlation	Significance
Ask Opinion	0.034	0.902
Give Suggestion	-0.370	0.159
Give Opinion	-0.360	0.159
Ask Orientation	0.159	0.170
Ask Suggestion	-0.520	0.039*
Give Orientation	-0.300	0.259

H5 - Maintenance Correlation with Time Urgency		
States Agreement	0.294	0.270
Shows Solidarity	-0.148	0.584
Shows Tension Release	0.138	0.610

direction. Out of the three positive maintenance categories, none were significant. Hypothesis 4 and Hypothesis 5 are not supported.

Hypothesis 6 states that permanent groups will follow a centralized pattern of communication during task work and will follow a decentralized pattern when off-task. A one-sample t test was run to compare the means of the task time structure and the downtime structure to the midpoint of the scale, 3.50. 3 questions represented downtime and 3 questions represented task work. The task time structure was not significant (mean = 3.56, $t[15] = .34$, $p = .74$) while the downtime structure was significant (mean = 4.47, $t[15] = 4.48$, $p < .001$). Therefore, Hypothesis 6 is partially supported.

Chapter 5

DISCUSSION

The purpose of this study was to determine how permanent groups, i.e. those not created for the purpose of a study, interacted internally in accordance with Bales' theory (1953). This study theorized that groups would split Bales' task and maintenance cycles into a task time, which focused on completing a project within a high stress situation, and a downtime, where there was no clear task to complete and no time pressure. This sort of situation with distinctions between task work and downtime is more prevalent in the working world and may have shown insight into group functions not normally found in temporary groups.

The first two hypotheses stated that permanent groups focus on task work exclusively during task time and go through social maintenance during downtime between tasks, forming the basis on which this study was built on. Hypothesis 1 was partially supported, as two of the four significant task variables were more prevalent during task time. Consideration and giving orientation indicate that permanent groups were giving directions about their given task and each other's opinions on what to do as well as considering the impact and effect their task had on time and individuals outside the group. Hypothesis 2 was not supported as all three of the significant downtime variables were actually greater during task time, which is an interesting occurrence. Giving orientation, showing tension, and tension release were theorized to be more common during down time. Time stress and asking for

orientation variables, considered more task-related, occurred more during downtime. This leads to the conclusion that during task time, groups go through both task and social maintenance phases to deal with the high stress of the situation and during downtime, they look back at how they could have better handled the task work inside the time allotted. One can also construe some of these variables along the lines of giving and asking for orders, showing tension through drudgery and releasing tension via shared confidence in the team. As the actual exercises are unknown, I cannot speculate how that may affect their choice of messages. This reflection is important to note, as it may have an impact on future projects the group takes on. If this is correct, group efficiency may rise over the course of multiple tasks, if those tasks are similar enough to apply the orientation requests and subsequent answers the group acquires during downtime. Military structure lends itself to this scenario: tactics are borne out of theory crafting and experience gained. All members of a team have some level of shared experience to rely on, similar to ER teams as Xiao noted.

Building on the first two hypotheses, Hypothesis 3 stated that there was a positive correlation between a group's achievement rate in task consequence and the positive to negative message ratio in following social maintenance downtime. While the results of this study were not significant, it is of note that the correlation between the achievement rate, measured by risk/reward, and the message ratio is in the right direction. This indicates that the hypothesized trend may be present but the small sample size of this study limits its potential. Taking this into consideration, this would suggest that Hypothesis 3 could be supported and groups that achieve greater tasks and feel they are rewarded for doing so have greater positivity and reduced stress during downtime between tasks. While this may seem common sense, this also includes

evaluation of the task itself, its impact on other individuals outside of the group, and risk to the group members during the performance of this task; all very important factors in determining if a group is successful in their stated objective. The important thing to note here was that the variable used as the observation of achievement ratio was risk/reward, to indicate how groups felt about the risk factor of failure vs potential payoff, as this should have an effect. It is possible that these factors are discussed more during downtime rather than considered during task work and it also possible that the reverse of Hypothesis 3 exists; that the lower the group's achievement rate in task consequence, the greater the negative to positive messages ratio in downtime. Group members may bolster the others when they perform well and subsequently tear each other down when they do not. In terms of Karau & Kelly's (1992) Attentional Focus Model, while this hypothesis was not supported, the projected trend supports the AFM. The time urgency and the team members' perception of it would change based on the amount of time given for a task. An imbalance in task versus social maintenance messages will likely occur based on team performance and consideration of the importance of the task. With the expansion into shared versus unshared information, this is especially noteworthy in a military sense, as noted for Hypotheses 1 & 2. As these teams go through the same training program, they have shared experiences and knowledge to draw from, and are likely not going to change significant patterns or team structure because of unshared information.

Next, the time urgency factor was introduced in Hypotheses 4 and 5, stating that there is a greater attention to task work in high time urgency situations and less attention is paid to social maintenance. Interestingly, both hypotheses were not supported. Hypothesis 4 had only one significant variable and it was negatively

correlated rather than positively, indicating that the pressure from time urgency either does not have an effect on task work or potentially distracts from the task at hand. Hypothesis 5 was not supported at all, which means that permanent groups likely complete social maintenance during time urgent situations as a method of dealing with the added stress it puts on group members. Combining this finding with the results of Hypotheses 1 and 2, it is likely that permanent groups go through both task and social maintenance phases during both taskwork and downtime. It is a likely reason for time urgency to have little to no effect on group performance, as group cohesion is necessary throughout the time urgent task. This might also be due to the phrasing of the questions, as orientation can also be dictated as giving and taking orders. In addition, military training is designed towards creating unity, and thus it is likely more significant that groups go through an accelerated Bales's cycle, with some elements of maintenance and task work missing, i.e. they might not have disagreement messages (usually not encouraged to reject or argue against orders) but have higher than average (compared to non-permanent groups) showing tension and tension release. A special note in Hypothesis 2's results is that time stress was higher during downtime. Therefore, if individuals are considering time stress more after the fact, time urgency would not play a role during a task and is considered once the task is complete.

It is rather surprising that Hypothesis 6, stating that permanent groups will follow a centralized pattern of communication during task work and a decentralized pattern when off-task, was not supported for task work, since previous studies (Xiao et al., 2002) have shown that groups in high stress tasks will change their communication pattern, usually to defined channels set by the organization those teams work for. There are a few possible reasons why this is not observed in this

study. First, during downtime, the teams are not all in the same location, encouraging a total lack of communication. Secondly, teamwork is integral to the military and such discipline is encouraged at all times. This leads to a definite camaraderie in the unit but does not lead to a change in communication patterns. Also, military units are organized by roles (U.S. Army, 2013), so team members are more likely to communicate with each other based on situational need rather than need for supervision. Still, some change was expected because of the nature of task work versus downtime. Another possibility is that the ranks of the people answering did not have actual command over the teams, and answering to a higher authority supervising the training. If this is the case, the structures Xiao noted may exist, but are outside the scope of this study. Still, groups did follow through on a more open communication pattern, though that is to be expected with the subjects observed. While downtime between training sessions still kept them together, they were more or less free to my understanding. As they were also from different universities and locations, it is unlikely they maintained communication after the fact unless they were told they would be kept in the same units, which is rather unlikely (given the tendency of the military to assign people on an as-needed basis).

Chapter 6

FUTURE POSSIBILITIES AND CONCLUSION

There are some additional issues that need to be addressed. First, this study used a survey method to determine Bales' variables, whereas the original model used a content analysis. This created an individual bias since each participant was able to answer the questions as they interpreted them rather than trained coders determining each message's quality. However, it did open up the possibility of team members' perspective into the productivity and cohesion. Down the road, it may be beneficial to utilize a content analysis in conjunction with a survey, providing information about the team's messages and communication structure along with an inside picture of team member relationships and their impact on performance. If available, additional research in unit structures and military exercises would be beneficial. Unfortunately, the ROTC was not willing to share such information and so it was more dependent on the survey and publicly available information.

The second main issue with this study is the low number of responses, which constricts the data. In two instances, hypotheses were partially supported because fewer than half the observed variables were statistically significant. In addition, in some of those cases, such as hypothesis 3, there were trends that supported the hypothesis. Unfortunately, with the data available here, it is possible that these cases were due to individual bias, isolated outliers, or another unknown factor. A

greater number of responses would have added greater clarity to the evidence provided by the hypotheses.

Building on these issues, there are a few pathways this study opens. First, by using Bales' original research method and adding the new variables to the content analysis, individual bias would be eliminated and a direct look at the messages sent between team members would be provided. While this does bring the issue of losing the insight into team members interpretations of their roles and messages, that is offset by the introduction of observing interactions beyond self-interpreted messages. This change of method would also standardize message codes.

With the insight provided by this study, subsequent research could also examine high stress versus low stress scenarios in different contexts from the one this study attempted to discuss. For example, rather than a training environment, disaster relief teams or actual military teams would provide even greater insight due to the more significant difference between the two states. Also, the same theories and concepts could be applied to work teams, such as NASA engineers developing a rocket or a marketing team working on an election campaign during the campaign versus after it. The important thing is to focus on groups that are involved in two different situations but maintain their cohesion as a group in between assignments.

As consideration and giving orientation are task variables that were significant during downtime, it is possible that permanent groups may show an increase in efficiency in subsequent tasks. This suggests that these types of groups are more likely to build upon experience and may prove to be more efficient in timed situations than newly formed groups.

In conclusion, this study aimed to identify how groups that persisted beyond single assignments communicated differently in low-stress and high-stress scenarios. Basing observations on Bales' categories of observation (Bales, 1953), it was hypothesized that in low-stress situations, groups would focus more on the social maintenance part of the cycle and more on task oriented objectives during the high-stress situations. While the evidence found in this study does not support this general hypothesis, it does suggest that with a more in-depth study with a larger pool of respondents, there is a difference in communication between the two states, noted by the partial support three of the hypotheses this study had. Overall, a stronger study may provide a better foundation for testing this concept.

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Appendix A

ROTC SURVEY QUESTIONS

DT-1	DT-2	DT-3	T-1	T-2	T-3
During downtime between exercises, I invite my teammates to a party or social function.	During downtime between exercises, I give helpful advice to my teammates.	During downtime between exercises, I contact my teammates regularly about upcoming events.	During an exercise, I give praise to a teammate doing a good job.	During an exercise, I expect my team to go beyond their role.	During an exercise, I give extra support to a teammate who needs it.
During downtime between exercises, I like to crack jokes for the team.	During downtime between exercises, I go out to events with my teammates.	During downtime between exercises, I will send funny articles/jokes to my teammates.	During an exercise, I try to lighten the mood with a joke or witty comment.	During an exercise, I make an attempt to encourage my team members.	During an exercise, I try to take a moment to relax in between work.

<p>During downtime, I usually agree to meeting with my team.</p>	<p>During downtime, I respond quickly to text messages and emails from my team.</p>	<p>During downtime, I expect my team members to respond to my messages quickly.</p>	<p>During taskwork, I acknowledge messages from my superior with a verbal response.</p>	<p>During taskwork, I acknowledge messages from my team members with a verbal response.</p>	<p>During taskwork, I look for acknowledgment of my messages from my teammates.</p>
<p>During downtime, I have ignored messages from my team members.</p>	<p>During downtime, one or more of my team members have ignored my messages.</p>	<p>During downtime, I or another member of my team will not assist in setting up team meetings.</p>	<p>During taskwork, I have rejected messages from my team when needed.</p>	<p>During taskwork, my team members will reject messages if they are too busy.</p>	<p>During taskwork, I or another member of my team will not assist other members of the team with task work.</p>

<p>During downtime, I will request assistance in setting up team meetings because I don't have time to do so on my own.</p>	<p>During downtime, I will vent about our team's assignments.</p>	<p>During downtime, I will withdraw from the group because I feel I am in under pressure.</p>	<p>During taskwork, I will request assistance from my team members when I feel pressured by the task.</p>	<p>During taskwork, my team members will request my assistance when they are under pressure.</p>	<p>During taskwork, I will express the desire to withdraw because of the stress.</p>
<p>During downtime, outside of the work environment, I will attempt to assert authority.</p>	<p>During downtime, outside of the work environment, I will argue with other team members about past performance.</p>	<p>During downtime, outside of the work environment, I will express dislike for other members of my team.</p>	<p>During taskwork, I will attempt to assert authority not within the responsibilities of my rank.</p>	<p>During taskwork, I will argue with other team members about the current objective.</p>	<p>During taskwork, I will call other team members derogatory names because of frustration.</p>

<p>During downtime, I provide suggestions on how to better perform on our next task.</p>	<p>During downtime, I provide suggestions on what to correct from our previous task.</p>	<p>During downtime, my teammates will provide suggestions on our team's performance.</p>	<p>During taskwork, I provide suggestions to my teammates about what actions to take.</p>	<p>During taskwork, I provide suggestions to my superior about what actions to take.</p>	<p>During taskwork, my teammates provide suggestions to me about how to approach our current task.</p>
<p>During downtime, I provide opinions to group members about our past work.</p>	<p>During downtime, my team members express opinions on our group's performance.</p>	<p>During downtime, my team members and I express opinions on previous and upcoming assignments.</p>	<p>During taskwork, I express my opinions on the current assignment.</p>	<p>During taskwork, my team members express opinions regarding the current assignment.</p>	<p>During taskwork, I express opinions on the performance of our team.</p>

<p>During downtime, I provide information about upcoming assignments to other team members.</p>	<p>During downtime, I confirm updates about upcoming tasks sent by my superiors.</p>	<p>During downtime, my team members will provide information about our team's objective.</p>	<p>During taskwork, I provide information about current orders to my teammates.</p>	<p>During taskwork, my team members are willing to clarify our team's current task.</p>	<p>During taskwork, I make sure to repeat important information to my team members.</p>
<p>During downtime, I will ask for suggestions about what we should do as a group.</p>	<p>During downtime, my team members will ask for suggestions about what we should do as a group.</p>	<p>During downtime, my superior will ask for suggestions about what we could do as a group.</p>	<p>During taskwork, I will ask my superior for suggestions about my assignments.</p>	<p>During taskwork, my team members will ask for suggestions about their assignments.</p>	<p>During taskwork, my superior will ask for suggestions about our current assignment.</p>

<p>During downtime, I ask for opinions on our assignments .</p>	<p>During downtime , my team members ask for opinions on our assignments.</p>	<p>During downtime, my superior will ask for opinions on our assignments.</p>	<p>During taskwork, I ask for opinions on our current situation.</p>	<p>During taskwork, my team members ask for opinions on our current task.</p>	<p>During taskwork, my superior will ask for my opinion on our current task.</p>
<p>During downtime, I ask for information about our next exercise.</p>	<p>During downtime , I ask for confirmation of messages to my teammates.</p>	<p>During downtime, my team members ask me for information about our assignments.</p>	<p>During taskwork, I ask for clarification on our current orders.</p>	<p>During taskwork, I have asked my superior to repeat our current orders.</p>	<p>During taskwork, I ask for more information about our current situation.</p>
<p>During downtime, I have considered the importance of our past work to those affected by its completion.</p>	<p>During downtime , I have discussed with my team members why our jobs are important on a larger scale.</p>	<p>During downtime, I want my team members to consider the impact of our work on other people.</p>	<p>During taskwork, I have considered the importance of my team's work towards the overall mission.</p>	<p>During taskwork, I have considered the importance of my personal effort to the team's ability.</p>	<p>During taskwork, I have expressed our team's importance to the overall mission.</p>

<p>During downtime, I have taken the time to think about the risk of failing our mission.</p>	<p>During downtime, I have discussed with my team the risk and reward of our past work.</p>	<p>During downtime, I have thought about the yield of our team's work results for the greater mission of our armed forces.</p>	<p>During taskwork, I have taken the time to assess the results of the completion of our task.</p>	<p>During taskwork, I have wondered if our work is worth the effort we put in.</p>	<p>During taskwork, I have worried if our team's failure to complete our task will have a larger impact on the whole mission.</p>
<p>During downtime, I plot out how to use my time.</p>	<p>During downtime, I feel I need to get things done within a certain amount time.</p>	<p>During downtime, I feel the consequences of a task are higher if it is not done within a specific time limit.</p>	<p>During taskwork, I felt pressed for time by my superiors.</p>	<p>During taskwork, I felt that tasks with limited time were higher priority than other tasks.</p>	<p>During taskwork, I feel that tasks that are not completed within the allotted time limit have higher consequences.</p>

Appendix B

RECRUITMENT LETTER AND INSTRUCTIONS

Recruitment Introduction

Hello, and thank you for taking the time to read this. We are currently running a study in order to learn more about small group communication, particularly when those groups are handling strenuous tasks and having downtime in between those tasks. If you would, please click the link below and answer the survey. The survey should take approximately 20 to 30 minutes to complete.

You must be at least 18 years of age to participate in this study.

https://delaware.qualtrics.com/SE/?SID=SV_3JJ7hrC4t1YjtVr

Your participation in this study is COMPLETELY VOLUNTARY. Your decision whether or not to participate in this study will not affect your current or future relations with the University of Delaware. If you decide to participate, you are free to withdraw from the study at any time.

Also, your decision to participate or not to participate will have no impact on your ROTC participation. The Communication department of the University of Delaware is conducting this study; the survey is simply being distributed through the ROTC.

Finally, all answers provided will be kept confidential; you will only be asked some basic demographic questions and no identification will be requested. In addition, information provided will be part of reports used in the study but only as aggregated so your own information will be impossible to identify.

Once again, thank you for taking the time to participate in this study.

Instructions

Please follow the link to the survey. As mentioned before, the survey should take approximately 20-30 minutes to complete. The first 3 questions are basic demographic questions, intended for purposes of sorting data. The following questions are a 10 point scale: please select the option that is closest to your approximation regarding the example behavior (1 = never occurs; 10 = always occurs). Please feel free to take your time answering the questions; please note though that you cannot stop midway through. There is one question near the end that asks you to explain how your team communicates: please note if your team has a standard leader and if members respond to him or her mostly during the situation or if your

team is more interactive. You do not need to go into great detail and please make sure NOT to mention names; only specify if the member or members are a leader or a regular member. Once you have completed the survey, please click submit. Thank you.

Thank You and Debriefing

Thank you for completing this survey. Your participation is greatly appreciated. We hope that you also have gained something from answering these questions.

Once the survey is completed, a debriefing will be sent out through the same channel the survey went through (ROTC will distribute it to all participants of the survey). This debriefing will show you the results of the study and explain how teams maintain their cohesion in between strenuous tasks. We hope that results will be beneficial to you all and will help you in working with your teams in the future. Please note that the results will be a generalized explanation, so it may or may not apply to your particular team.

Again, thank you for participating and look forward to hearing from us in the near future.

Appendix C

HUMAN RESEARCH PROTOCOL

HUMAN SUBJECTS PROTOCOL University of Delaware

Protocol Title: Group Communication Behavior Study

Principal Investigator

Name: Stephen Polacek
Department: Communication
Contact Phone Number: 410 916 7004
Email Address: spolacek@udel.edu

Investigator Assurance:

By submitting this protocol, I acknowledge that this project will be conducted in strict accordance with the procedures described. I will not make any modifications to this protocol without prior approval by the IRB. Should any unanticipated problems involving risk to subjects occur during this project, including breaches of guaranteed confidentiality or departures from any procedures specified in approved study documents, I will report such events to the Chair, Institutional Review Board immediately.

1. **Is this project externally funded?** NO

2. **Research Site(s)** University of Delaware

Is UD the study lead? YES

3. **Project Staff**

Please list all personnel, including students, who will be working with human subjects on this protocol (insert additional rows as needed):

NAME	ROLE	HS TRAINING COMPLETE?
Stephen Polacek	Principal Investigator	Yes
Charles Pavitt	Co-Investigator	Yes

4. **Special Populations** None

5. RESEARCH ABSTRACT

The proposed research is study of behavior in permanent groups (groups that exist beyond one assigned task) and how behavior during a task differs from behavior during downtime in between tasks. Using Bales' theory of equilibrium, the proposed study intends to analyze groups' positive feedback, negative feedback, attempted answering, questioning, and stress levels in order to see if the group focuses on task communication during task work time as well as if the group focuses on social maintenance communication during downtime. In addition, the group's communication pattern will be observed to determine another difference between the two states. Finally, individual member preferences for time usage will be measured to determine a stress factor during task work and downtime. The goal of this study is twofold: a. expand the theory of equilibrium to explain how permanent groups operate; and b. establish the need for downtime for groups that participate in high-stakes, high-stress tasks.

6. PROCEDURES

The study consists of a single survey that measures the original 12 categories of the theory equilibrium along with 3 more categories added for the purposes of measuring stress during the cycle.

1. These 15 categories have 6 questions each (3 for task time, 3 for downtime), with a total of 90 questions.
2. There are 10 questions for measuring group communication patterns during the two differing states.
3. There are 6 questions to measure individual time usage preferences.
4. Finally, there are 3 demographic questions (age, gender, and rank) for the purposes of sorting the data.

The survey is an individual survey and should only take about 20 to 30 minutes.

7. STUDY POPULATION AND RECRUITMENT

The survey will be distributed to 50 cadets who are members of the University of Delaware's Army ROTC program; in addition, the recruiter of the ROTC program will be sending the survey to 25 reservists who participate as instructors during the training sessions of the cadets. In order to ensure privacy and timely delivery, the recruitment officer at the Army ROTC will forward the survey to the cadets and reservists. The survey will also be sent to a current US Navy trainee who will share it with her current group of 10 trainees, including her. This adds up to a total of 85 potential respondents.

When approached, both the ROTC recruiter and the Navy trainees were accepting of the proposition. The only requirements they set were that there were no questions asking for opinions on political or internal matters (such as women in the Army). Respondents will not be forced to answer the survey; it is entirely voluntary.

8. RISKS AND BENEFITS

Participation in the proposed research should only place participants in minimal risk. As the survey only asks about their regular behaviors during training and outside of it, there is no change in their behavior or possible emotional or physical harm that could result from taking the survey. The benefit of this research for the participants is the opportunity to analyze their own group behaviors. Additionally, when the research is complete, a debriefing will be sent to the participants informing them of the results and how their group dynamics benefit from the results or may possibly use to change dynamics that are detrimental.

9. COMPENSATION

There is no compensation currently planned.

10. DATA and 11. CONFIDENTIALITY

Confidentiality will be promised with this survey; the only identifying information asked for in the survey is the age, gender, and current rank of the respondent. In addition, the survey is being delivered by the recruitment officer, ensuring another level of privacy for the respondents because no contact information will be accessible. This data will only be used to identify cases that cannot be processed. Once data for each category is collected and analyzed, identification data will no longer be necessary. Responses regarding rank may be used to analyze group communication patterns but specific ranks will not be mentioned in the study's results.

12. CONFLICT OF INTEREST

Do you have a current conflict of interest disclosure form on file through UD Web forms?
No

13. CONSENT and ASSENT

Consent is implied via the completion of the survey.

14. Other IRB Approval

Has this protocol been submitted to any other IRBs? No

15. Supporting Documentation

Please list all additional documents uploaded to IRBNet in support of this application.

Questionnaire