

PEER RESPONSES TO THE BAD APPLE IN PROJECT TEAMS: FROM  
ATTRIBUTION TO COMMUNICATION

A Dissertation

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This dissertation research used attribution theory to examine how team members react when there is a motivation losses problem in teams as the first step to develop a peer-to-peer intervention. By challenging the assumptions of the extant attributional model and the norm of studying attribution as a static decision, I conducted two empirical studies to examine the effect of anticipation for future interaction and interaction frequency on teammates' motivation and ability to make attributions as well as the effect of the low-contributors' explanations on teammates' attributions, emotions, and the change of attributional confidence. Results supported the moderated mediation effect of anticipation for future interaction on attribution process such that the indirect effect of attributions on behavioral response was stronger for people with no anticipation for future interaction than for people with high anticipation. Moreover, the explanations provided by the low-contributor were found to increase teammates' attributional confidence significantly.

## BIOGRAPHICAL SKETCH

Yi-Ching (Angel) Liu was born in Taiwan. She studied Communication with a minor in Social Psychology and graduated as Top one of the class from Shih Hsin University in Taiwan in 2004. She then studied and worked as a part-time research assistant in National Chiao Tung University where she received Presidential Awards each year and a Master's Degree in Communication in 2007. She became interested in group decision-making and group performance after she worked as a product marketing specialist in AsusTek Computer Inc for a year and full-time research assistant for two years in National Chiao Tung University. She started the M.S./Ph.D. program in Communication at Cornell University in 2010 and worked with Professor Poppy McLeod, who became the Chair of her committee. Under the guidance of her advisor, she started to study groups from the perspective of social psychology. Her research focuses on the impact of individual differences in personality, work habit preferences, and motivation on team performance. After graduating with a Ph.D. in August 2016, she will go back to Taiwan with her husband, Ko-Ying, and she will start working as an Assistant Professor at the department of Business Administration in National Taiwan University in Taipei, Taiwan. Her goal is to develop a peer-to-peer approach for the problem of group motivation loss.

To my dear heavenly father, God

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*“I have seen something else under the sun:  
The race is not to the swift  
or the battle to the strong,  
or wealth to the brilliant  
or favor to the learned;  
but time and chance happen to them all (Ecclesiastes 9:11).”*

*“With man this is impossible, but with God all things are possible (Matthew 19:26).”*

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## CHAPTER 1

### INTRODUCTION

Imagine the following scenario: *Before you joined the team, you thought everyone would contribute fairly. However, you started to notice that there was a teammate who seemed to be absent-minded all the time and didn't contribute as much as everyone else. You had tried to talk to the supervisor, but the supervisor said that his hands were tied. Team assignment had been announced and there was no way that he could reassign this problematic teammate. The supervisor promised to talk to the teammate. You could only hope that this teammate would start to contribute, but the other teammates seemed to give up on this team already. You felt that it was unfair to bear a free-rider in your team when other teams seemed to have their full firepower. You knew the rest of the team members would need to work harder to compensate the lack of this free-rider's effort. You felt that teamwork was terrible!*

The scenario above reflects a very common teamwork problem that we often experience in real world situations: someone is not contributing to the team. While the behaviors of a low-contributor may be easily observable, the reason(s) behind it is much harder to fathom if we were not the low-contributor. While there could be various reasons behind low-contribution, be it low ability, low motivation, difficult task, and so on, this dissertation research will focus on the problem of low contribution due to motivation loss in teams. There are two types of motivation loss in teams: free-riding and social loafing. Whereas free-riding (Kerr & Bruun, 1983) refers to the situation where people intentionally reduce their effort if they think their effort

to group success is dispensable, social loafing (Latané, Williams, & Harkins, 1979) describes the situation where people unintentionally decrease their effort after they are put into teams (Karau & Williams, 1993). Regardless of whether the cause of the low effort is intentional or unintentional, an individual's low contribution may greatly impact the mood, attitude, and behavior of other team members, team interaction (Aggarwal & O'Brien, 2008; Jassawalla, Sashittal, & Malshe, 2009; Pfaff & Huddleston, 2003) and the team outcome (Kerr & Tindale, 2004); therefore, it is important to understand how to prevent or mitigate the problem of motivation loss in teams.

Research on motivation loss in teams (Steiner, 1972) has been building steadily for over half a century. Although considerable attention has been paid to finding the factors that prevent motivation loss (See Kerr & Tindale, 2004 for a review; Wegge & Haslam, 2005; Williams & Karau, 1991), most of the previous research focused on the effect of task, team, or team member features on the motivation of individuals and little research has examined the group dynamics between group members (Hüffmeier & Hertel, 2011). In addition, most of the solutions, for example, raising individuals' interest in group tasks and involvement or designing the reward structure such that group success becomes critical for individual outcome (Williams, Karau, & Bourgeois, 1993), require team leaders or managers to have the know-how for task design to make team collaboration work. It's one thing to have the know-how, it's another to have the resources and capacities to compose the team or design tasks and reward structures as suggested by research. Whereas most of previous research tried to solve the problem of motivation loss with structural,

external, and top-down approaches, these solutions may be of limited use when put into practice.

Moreover, while the research literature tended to focus on structural and managerial interventions, less attention was paid to using interpersonal interventions to solve the problem of motivation losses and we have far less information in that regard. People can benefit if they know some effective interpersonal approaches when they encounter the problem of motivation loss in teams. In fact, for organizations, interpersonal intervention can be more effective and more immediate than managerial intervention. Calling out for help from managers, who have the power to impose sanctions against the free-riders, yet who may not know as much as an insider about the division of labor and real contribution, might not be as effective as tackling the problem directly by peers who are in the team project and know more about the team dynamics and real contribution of each member (Hüffmeier & Hertel, 2011). Moreover, in cases where managerial intervention only comes in during the final review of a team's project, it will be too late to solve the problem. Last of all, any managerial intervention might be disruptive and bear the risk of hurting the group dynamics and cohesion. Thus, it is hoped that this dissertation research can be the first step of the research program to help solve the problem of motivation loss in teams via interpersonal intervention.

To know what interpersonal intervention strategy people can have, it is essential first to understand how people make sense of the low-contributing individual's behaviors and how they handle the situation accordingly. When people notice that there is a problem of motivation loss in their teams, previous research

suggested that people may withdraw their efforts when they notice that somebody is free-riding so that they can avoid being a sucker (Kerr, 1983; Kerr & Bruun, 1983). People may also choose to compensate for the low-contributing individual's work, train the individual to do the work, ask the individual to work harder, or exclude the individual from the teamwork altogether (Jackson & LePine, 2003; LePine & van Dyne, 2001). Given that people may have many different types of behavioral reactions, the ensuing question concerns what factors will influence people's reactions.

It is suggested that people's behavioral reactions may depend on how they make causal attributions of a situation (Weiner, 1985). Attribution scholars believe that people would try to find explanations for certain behaviors if such behaviors result in unexpected, novel, important, or negative outcomes because they want to have a better control of the social environment and better management of themselves and the people who are involved (Heider, 1958; Kelley, 1972; Weiner, 1985). Weiner's (1985; 1986) attribution theory of motivation and emotion was first used to explain how people's attributions of their past failures influence the motivation and effort people will make to fulfill their personal achievement goals. Later, the theory was extended to study people's helping behaviors where "attribution" was used to understand how people made causal attributions of other people's helping request and what made people decide to help. Whereas the original setting of the helping behavior study was mainly in public situations where actors and observers didn't know each other (e.g., Reizenzein, 1986; Weiner, 1980a, 1980b), Weiner's (1985, 1986) attributional model has also been extended to organizational contexts where people are assumed to have

interdependent relationship, such as the study of supervisor and subordinate relationship (Mitchell & Wood, 1980) and colleagues in ongoing workgroups (Jackson & LePine, 2003; LePine & van Dyne, 2001).

How people make causal attributions and how they react may be influenced by the settings. From the prior attribution literature, we know how people may react in public situations where walking away from the requester is not too difficult for there is no interdependency between observers and actors. We also have LePine and van Dyne's (2001) attributional model which sheds light on how individual characteristics of the low-performer would influence peers' attributions, affective responses, and behavioral responses in ongoing work groups. However, we do not know how people would react if they encounter a low-contributing individual in the type of the ad-hoc teams where people didn't know each other before but now they need to work together for a certain period until the task is accomplished. As noted in LePine and van Dyne (2001), the behavioral choices may change as the group settings and the interdependent relationships change. For example, "avoiding" the low-contributor is probably an option when people have the choice to work with someone else in the team whereas such choice would become unlikely when the team size is smaller and when the task interdependency is higher. Given that most of the application researches examined the influence of attribution on people who are in standing teams in organizations, the present research considers how the lack of the kind of familiarity that team members have with one another in standing teams influences people's attributions.

This dissertation will examine whether and to what extent being in ad hoc teams, comparing to being in standing teams, would influence people's attributions and behavioral reactions toward the low-contributor in teams. Ad hoc teams are common practices in the public and private sectors. It's not unusual to see an employee involved in several projects while the team membership may vary and end by projects. Being in multiple teams may lead to low-contribution in certain teams and high-involvement in others. In that case, it is important to study to what extent people's attributions and behavioral responses would be influenced simply by the fact of being in ad hoc teams. As noted above that bearing one or multiple low-contributors can dampen group morale (Aggarwal & O'Brien, 2008; Jassawalla et al., 2009; Pfaff & Huddleston, 2003) and the team outcome (Kerr & Tindale, 2004), such negative impacts may be more detrimental to ad hoc teams than to standing teams. Compared to standing teams, it may take people who are in ad hoc teams where there is zero or very limited prior history with each other, longer time to figure out how to handle the low-contributor. In addition, when ad hoc teams are required to pursue high efficiency while achieving high performance, losing part of the input from certain team members will definitely delay the progress of closing a project. That said, how people react emotionally and behaviorally toward a low-contributor in ad hoc teams may be very different from how they would react in standing teams. It is thus essential to examine to what extent the characteristics of a team may influence how people make sense of the low-contributing behaviors and to what extent they react accordingly.

Given that certain characteristics of a team may influence how people make attributions of a low-contributing teammate's behaviors, the present research will

focus on two factors which could differentiate the setting of the prior attribution model, standing teams, from ad hoc teams: the extent to which people can anticipate working together in the future, and the frequency with which team members interact with each other. These two factors may affect the ability and motivation of team members to seek out information about a low contributing member and the causes for his or her behavior. Past research has applied attribution theory to the settings where the low-performer and the other team members are in an ongoing relationship and work on an interdependent task (e.g., LePine & van Dyne, 2001), which would provide opportunities for people to evaluate characteristics such as ability and effort of the low-performer. The question is what if the problem occurs in the type of ad-hoc teams where people did not know each other before, which would limit their opportunity to estimate the ability and effort of the low-performer. Given that people need to acquire information in order to make attributions of the low-contributor, if anticipation for future interaction and interaction frequency will influence people's motivation and ability to collect information, this dissertation asks how may attribution process change as these two factors vary? By challenging the assumptions and examining the boundary conditions of the prior attribution model, this dissertation explores the potential moderating effect of the two factors on the prior attribution model.

Another focus of the present research is to examine how information given by a low-contributing individual may change people's attributions. Studying the effect of accounts provided by the low-contributing individual to teammates will allow me to look at the attribution process from an interactive perspective. As pointed out in Wood

and Mitchell (1981), one problem of previous attribution research is that it tended to look at attribution as one-sided and static and overlooked the fact that attribution process can be interactive. Attribution should not be perceived as one-time only and never changing. As people seek information to help them make causal attributions of the low-contributing individual's behaviors, new pieces of information that they receive can change the attributions that they previously make. When people seek information about the low-contributing individual, spurred by the need to reduce their uncertainty about this individual and the situation, their attributions may change accordingly. Things such as an account provided by the low-contributing individuals for their behavior may change how people attribute the cause of the low-contributing behaviors. It is important to examine how people's attributions are influenced after they receive new information from the low-contribution individual, for this will allow us to study attribution from a two-sided perspective and as a continuous process and challenge the norm of how attribution has been studied.

Another potential contribution of examining how information given by the low-contributing individual may change people's attributions would be to help us understand the role of *communication* in attribution theory of motivation and emotion. Through studying team dynamics, the real intra-team members' communications and interactions, we can know how communication influences the way people make sense of the low-contributing individual's behavior, and design an interpersonal intervention eventually. As described earlier, the attributions people make will influence the motivation and effort people put forth for the team project in the future. If attribution process should be perceived as interactive, the original attribution theory of motivation

and emotion could be revised in such a way as to have a place for *communication* in changing attribution and ensuing motivation and emotion. Such additions to attribution theory can also pave the way for future research in cross-level influences of individual motivation on team motivation.

To conclude, this research attempts to address the aforementioned issues by employing attribution theory first to examine how people make sense of the low-contributing individual's behavior when certain characteristics of a team change and how the low-contributing individual's explanations influence other team members' attributions. Through examining how they make sense of the interactions and the way that people communicate, it is hoped that the results of this dissertation research could be the first step of a research program to develop interpersonal interventions for people who encounter the problem of motivation loss in their teams. The interpersonal intervention could have practical implications for team collaboration and extend previous research on the problem of motivation loss. Before developing any intervention strategy and training module, it is essential to investigate whether and to what extent people's attributions and behavioral responses may vary with certain characteristics of a team. If certain team characteristics indeed have impact on how people make sense and react to the problem of motivation loss, people can be reminded of situations where they are prone to make certain attributions.

The objectives of this dissertation research are therefore threefold: first, to understand the attribution processes involved in interpersonal interventions for the problem of motivation loss in teams; second, to understand how two key team characteristics, the prospect of future relationship and interaction frequency, influence

attribution process, including the attributions people make, their effective responses, and behavioral choices; third, to examine the effect of the information provided by the low-contributor on teammates' attribution process.

### **Overview of Dissertation Chapters**

The following chapters of this dissertation are structured as follows. In Chapter 2, I review the literature related to the three objectives, including the literature in motivation loss, attribution, and research in accounts. Then, I present a conceptualization of the attribution process model which provides the foundation for my research and my hypotheses. In Chapter 3, I present the methods, results, and discussion of the first study. In Chapter 4, I present the second study. Finally, I provide a general discussion of the findings in both studies and their research as well as practical implications.

## CHAPTER 2

### LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

The study of group motivation loss (Steiner, 1972) has been an important topic in small group research. Research has shown that group motivation losses can cause serious damage to team performance (Kerr & Tindale, 2004). It also influences people's attitude toward teamwork during the process (Jassawalla et al., 2009) and afterwards negatively (Aggarwal & O'Brien, 2008; Pfaff & Huddleston, 2003). Scholars have identified three different types of group motivation losses. The first one is the *social loafing effect* (Latané et al., 1979), which describes the process in which people *unintentionally* reduce their motivation and effort when working collectively with other people (Karau & Williams, 1993). The second type of group motivation loss is the *free-riding effect* (Kerr & Bruun, 1983), which occurs when people *intentionally* reduce their effort if they think their effort for group success is dispensable. The third type is the *sucker effect* (Kerr & Bruun, 1983; Kerr, 1983), which occurs when people withdraw effort after they notice that somebody is free-riding. Regarding the underlying reasons for group motivation losses, research has discovered that group motivation loss tends to increase when extrinsic motivation such as unidentifiable individual contributions to teamwork is high or when intrinsic task involvement is low (George, 1992). Conditions that could increase the cost of effort or decrease one's sense of responsibility would make social loafing more likely to happen (Kerr & Tindale, 2004).

Considerable attention has been paid to finding the factors that prevent the

problem of group motivation loss and create group motivation gain. In a review of these factors, Kerr and Tindale (2004) noted, for instance, that an individual's interest in the group task and involvement, group cohesion, and punishment for poor performance might attenuate group motivation loss effects. Regarding ways to increase group motivation gains, they concluded that people were more likely to compensate for other group members if they find group success to be important to them and if they were concerned about the evaluation of group performance (Wegge & Haslam, 2005; Williams & Karau, 1991; Williams, Karau, & Bourgeois, 1993). Other mechanisms that studies have found to create group motivation gains include social comparison (Williams & Karau, 1991), social indispensability (Hertel, Niemeyer, & Clauss, 2008; Weber & Hertel, 2007), social compensation (Williams & Karau, 1991), and group identification (Gockel, Kerr, Seok, & Harris, 2008). In brief, these research findings suggested that group motivation could be increased through the "right" design of the task, team, teamwork evaluation and may depend on the relationship among team members.

Whereas substantial attention has been paid to examining the effect of task, team, or team member features on the motivation of individuals, little research has examined the group dynamics between group members (Hüffmeier & Hertel, 2011). Some solutions for the problem of group motivation losses such as raising individuals' interest in group tasks or designing the reward structure such that group success becomes critical for individual outcome (Williams, Karau, & Bourgeois, 1993) require managers to have the know-how and resources to design the team and task

beforehand. What suggestions can group scholars offer, however, when people encounter the problem of group motivation losses despite how their managers design tasks, reward or penalty structures, or divide the labor strategically beforehand? Whereas the solutions suggested by prior research try to solve the problem of group motivation losses with structural, external, and top-down approaches, placing substantial emphasis on manager, less attention was paid to using interpersonal intervention to solve the problem and we have far less research in this domain.

To understand what interpersonal approach is available to fix the problem of motivation loss of individual members in teams, it is essential to first understand how people make sense of the behavior of the person who causes the problem. This chapter first reviews the literature of attribution and discusses how the attribution process may change depending on certain characteristics of a team. Then, I examine the literature in accounts to discuss the possibility to study attribution as a continuing and interactive process. At the end of the chapter, I present a conceptualization of the attribution process model that I planned to test in this dissertation.

### **Attribution Theory**

The process of thinking and explaining the causes of certain outcomes was called “*attribution*” by Fritz Heider (1958), the founder of attribution theory. He believed that people constantly observe and explain why certain outcomes happen using their everyday knowledge of interpersonal relations, which he referred to as “common-sense or naïve psychology (p.4).” He noticed that people would try to make sense out of the information they collected by separating it into two categories:

personal and impersonal causes. *Personal* causes are the factors that are located in persons (e.g., ability and effort) whereas *impersonal* causes (e.g., task difficulty, luck) are the ones that originated in the environment of the person. Heider's (1958) work was later developed by Kelley (1967, 1973) and (Weiner, 1985, 1986).

### **Kelley's covariation and configuration principles.**

Subsequently, Kelley (1967, 1973) developed the *covariation principle* to describe how people make causal explanations when they have information from multiple observations. The *Covariation principle* describes the situation when “an effect is attributed to one of its possible causes with which, over time, it covaries” (Kelley, 1973, p.108). This principle can only work when the observer has multiple observations about the effect to be explained. Given available information, people can make causal attributions based on three criteria: consensus, distinctiveness, and consistency. *Consensus* concerns the covariation of other people's behavior in the same situation. *Distinctiveness* refers to the information on how one behaves uniquely in this particular situation. Lastly, *consistency* information helps the observers examine how often the actor's behavior occurs across time. According to McArthur (1972), the extent to which people are more likely to attribute the cause of the effect to a person, stimulus, or circumstance depends on combinations of different levels of consensus, distinctiveness, and consistency. To illustrate, using McArthur's experimental material, people who receive information that indicates low consensus (e.g., “hardly anyone who hears the comedian laughs at him”) low distinctiveness (e.g., “John also laughs at almost every other comedian”), along with high consistency

(e.g., “In the past John has almost always laughed at the same comedian”) are more likely to make personal attributions (i.e., John laughs at the comedian because of something in John) than situational attribution.

Additionally, Kelley (1973) developed a *configuration model* to describe how people make causal explanations when only a single observation is available. He believed that, in order to make causal attributions using limited information, it is necessary for observers to consider factors that are potential causes for the effect. He identified three types of causal schemata that people would use to make causal attributions: (a) schema for multiple sufficient causes (i.e., either an internal cause or an external cause is sufficient to be a potent force), (b) schema for compensatory causes (i.e., a trade-off situation between two causes such as success occurs either when ability is high, when task is easy, or when two causes are moderately so.), and (c) schema for multiple necessary causes (i.e., both causes have to be present for the effect to occur). The differentiations that Kelley (1967, 1973) made between multiple observations and a single observation are relevant to the research questions raised in this dissertation, concerning the impact of the prospect of future relationship and interaction frequency on attribution process.

### **Weiner’s attributional theory.**

Building on prior work on attribution theory, Weiner (1985) proposed that individuals’ attributions of the underlying cause of unexpected, negative, or important behaviors and outcomes would influence their affective and behavioral responses. In the context of personal achievement, he believed that people’s attributions of an

outcome would determine the motivation and effort people put forth in the future. According to his attribution model, future behavior is motivated by affect and expectancy of success, which are psychological consequences of the causal attributions. Instead of using one single causal dimension, personal vs. impersonal, to explain behavior, Weiner suggested that there were at least three properties that perceived causes of success and failure share in common: locus, stability, and controllability. These three causal dimensions will result in different cognitive, affective, and behavioral responses. The first causal dimension, *locus*, is used to examine whether the cause of the result is contingent on personal factors or situational factors, that is, whether it is an internal or external cause. The second causal dimension, *stability*, is used to consider whether the cause is something that is constant (e.g., ability) or variable (e.g., mood). It was found that stability attributions have an impact on one's expectancy of success (Valle & Frizez, 1976). If the cause is something that is low in stability, one's expectancy for change is high, any attempts to change the causes for a better outcome should be perceived to have greater utility. The last causal dimension, *controllability*, is used to examine whether the cause of an outcome is something that a person can control.

To explain Weiner's (1985) attributional theory using the example of a scholar who received a rejection letter from a journal editor, if the scholar attributed the cause of the rejection to lack of his/her own effort, such cause is likely to be perceived by himself as internal, controllable, and unstable. Internal attribution would elicit low self-esteem for failure; controllability would foster feelings of guilt; stability, in turn,

influences the expectancy of future success. If the scholar perceived the lack of effort as something that is unstable (e.g., temporary exertion) as opposed to stable (e.g., long term effort), it is more likely that the scholar would have hope and motivation to increase effort in the future. This example illustrates the personal achievement context that Weiner's (1985) attributional theory originally focused on. However, his theory was not limited to explaining how personal motivation and emotion would be developed from an attributional perspective but could be extended to explain how people make causal attributions of another person's behaviors.

***Attribution of another person.*** Whereas the aforementioned example was set in the context of personal achievement, Weiner's (1985, 1986) attributional theory can also be used to understand how one perceives another person; Weiner had extended his attributional model to the context of helping behavior. His model of helping behavior assumes individuals help others based on their judgment of "why" help is needed. Among the three causal dimensions, controllability has been identified as the primary dimension influencing one's willingness to help (Barnes, Ickes, & Kidd, 1979; Meyer & Mulherin, 1980; Weiner, 1986). Weiner (1986) suggested that, if the reason why someone needs help is something that is *controllable*, people tend to experience anger and do not offer to help. However, if the cause is *uncontrollable*, people often feel pity for the individual and consequently offer their help. For example, Weiner (1980b) found that students were less likely to lend class notes to another student if the reason for skipping class was controllable (went to the beach) than when it was uncontrollable (eye problem). Meyer and Mulherin (1980) also found

support for the mediating effect of affects. They presented participants with hypothetical situations, which were variations among the three causal dimensions (locus, controllability, stability), describing the reason an acquaintance had the need for financial aid. For example, the acquaintance needed the aid because he or she couldn't work due to health problems (stable, internal, uncontrollable), or because he or she occasionally was laid off but could have gotten better work out of town (unstable, external, controllable), and so on. Their results indicated that the effect of controllability on the intention to help was indirectly influenced by affect. Overall, several studies found support for the link between attribution, affect, and action (e.g., Meyer & Mulherin, 1980; Reizenzein, 1986; Weiner, 1980a, 1980b), that is, causal attribution influences people's affective responses, which in turn, affects people's helping behavior. In other words, the effect of causal attribution on helping behavior is mediated by people's affective reactions to the cause.

*Applying attribution in an organizational context.* Early research that extended attributional theory to the organizational context mainly focused on the relationship between supervisor and subordinates (e.g., Green & Mitchell, 1979; Mitchell & Wood, 1980; Struthers, Weiner, & Allred, 1998; Wood & Mitchell, 1981), and the most frequent topic of this research has been how supervisors' attributions influence their responses to poor performance of subordinates. For instance, Mitchell and Wood (1980) found that supervisors tended to blame subordinates as opposed to the situation or the task for the cause of medical incidents. Moreover, supervisors made more internal attributions and used more negative responses at subordinate nurses such as verbal reprimand when the subordinate's work history was poor and

when the outcome was serious than when the subordinate's work history was good and when the outcome was not serious. They also found that the more internal attributions supervisors made about the incident the more supervisors thought it was appropriate to direct their responses at the subordinates. Their findings that supervisors tended to blame subordinates rather than the situation seems to be an illustration of the fundamental attribution error (Jones & Harris, 1967; Ross, 1977), which refers to the tendency to make attributions that are fundamental to the person as opposed to the situation.

Whereas Mitchell and Wood (1980) examined the factors that lead to certain causal attributions, Struthers et al. (1998) investigated the cognitive and affective mechanism behind personnel decisions. Struthers et al. (1998) conducted three experiments to examine how personnel managers' decisions changed depending on the causal information provided about an employee's low work performance. The causal information they tested was the variation of different levels of ability and effort. They targeted at these two types of causal information because they differed on controllability and stability. They theorized that failure which resulted from low effort was more likely to be perceived as controllable and unstable, whereas failure due to low ability was more likely to be evaluated as something out of personal control and relatively stable. While controllability relates to responsibility, stability concerns expectancy for future success. They presented student participants with four scenarios, in which each described a reason (low/high ability and low/high effort) why an employee missed the deadline. Their findings supported the hypothesis that the extent

to which an employee was perceived as responsible for his or her low work performance depended on the locus attribution and controllability attribution people made. The more internal and controllable the attribution people made, the more responsibility people would attribute to the employee. In addition, responsibility was positively related to anger and behavioral choice to reprimand and negatively associated with sympathy and behavioral choice to console.

From the aforementioned discussions, we know the characteristics of the poor work performer such as work history, ability, and effort as well as the seriousness of outcome incidents would influence the extent to which supervisors allocate responsibility to employees versus situations and supervisors' behavioral responses. Nevertheless, to develop an interpersonal approach for the motivation loss problem, knowing how peers make causal attribution of their colleague's negative behavior is important. Next, I will review the literature on how peers react to their low-performing colleague and what affect their behavioral responses.

### **LePine and van Dyne's attributional model of peer responses to coworker.**

Building on Weiner's (1986) attributional theory, LePine and van Dyne (2001) developed an attributional model specifically for peer responses to low-performing colleagues. Their model suggested that peers' behavioral responses toward the low-performing colleague in ongoing workgroups were determined by the attributions for *locus* (assigning the responsibility for poor performance to the low-performing colleague or the situation, *controllability* (triggering affective responses of either

sympathy or anger), and *stability* (resulting in cognitive responses of high or low expectancy for change). Their model described the process of how the low-performing colleague's characteristics (i.e., ability and conscientiousness) influence peers' attributions of the low performance and how the attributions impact peers' affect, cognition, and behavioral responses.

Compared to the prior research based on Weiner's (1985) focus on helping behaviors among strangers (i.e., to help vs. to neglect), LePine and van Dyne (2001) focused on colleagues in ongoing workgroups with relatively high task interdependence. They believed the link between attributions and affect responses validated from prior research in stranger settings would also apply to colleagues in ongoing workgroups, but they proposed an expanded range of behavioral responses. The dichotomous behavioral responses in stranger settings limited the possibility that colleagues could be proactive in how they could respond to the low-performing colleague if their personal rewards were interdependent. Thus, the behavioral responses they proposed included a range of possibilities such as compensating the low-performer's work, motivating the low-performer, or rejecting that individual.

Quite a few empirical studies found support for the main premise of LePine and van Dyne's (2001) model: the effect of low-performing colleague's characteristics on peers' behavioral responses to the low-performing colleague is mediated by peers' attributions and affective responses. For example, using the experimental vignette methodology and student samples, Jackson and LePine (2003) found that the effect of low-performers' characteristics (e.g., ability, motivation) on peer responses (i.e.,

compensate, train, motivate, and reject) was mediated by controllability and sympathy as well as stability and expectation of change. Specifically, the perceived ability of the low-performer was positively related to controllability, which has a negative relationship with sympathy. Ability was also negatively related to attribution of stability, which had a negative relationship with the expectancy that the low-performer can change. Through the attribution of controllability and sympathy as well as stability and expectancy for change, perceived ability of the low-performer was positively related to motivating and rejecting but negatively related to compensating and training. Perceived motivation, on the other hand, was positively related to stability, which has a negative relationship with expectancy for change. Motivation was also negatively related to controllability, which has a negative relationship with sympathy. Through the attribution of stability and expectancy for change as well as controllability and sympathy, perceived motivation of the low-performer was positively related to compensating and training but negatively related to motivating and rejecting. In addition, they also examined the effect of peers' personality characteristics on peer response. They found that peers with high extraversion were more likely to choose training and motivating the low-performer. Peers with high agreeableness were more likely to choose compensating and less likely to choose motivating and rejecting.

Other empirical research further examined the interaction effects of the ability and motivation of the low-performer on peer response. Their findings were consistent with LePine and van Dyne's (2001) model. For example, Taggar and

Neubert (2004) had participants watch a video in which a group of actors were instructed to act based on provided characteristic behaviors of cognitive ability (high, low) and conscientiousness traits (high, low). Participants were asked to provide their response regarding one randomly selected actor on attributions, emotions, expectations for future performance, and behavioral responses. They found that there was an interaction effect between cognitive ability and conscientiousness such that high cognitive ability and low conscientiousness low-performers were rated high in *controllability* and low in *stability* whereas low-performers with low cognitive ability and high conscientiousness were rated low in *controllability* and high in *stability*. They also found that the emotions such as *sympathy* and *anger* mediated the relationship between attributions of *controllability* and people's *willingness to help*. To understand the impact of individual characteristics of the low-performer on the team, Taggar and Neubert (2004) conducted a second study in which they used student teams and they had participants report their personality traits at the beginning of the project and had them evaluate each other's prosocial behavior toward the end of the project. They found that the most prosocial behavior was observed in teams where the low-performers were low in cognitive ability and high conscientiousness and the least was observed in the teams where the low-performers were of high cognitive ability and low conscientiousness. Similar to LePine and van Dyne's (2001) model, which examined how the characteristics of the person who needed help affected attribution process and behavioral responses in the sense of organizational citizenship behaviors, Taggar and Neubert (2004) found that the characteristics of the person who needed help influenced the extent to which prosocial behavior was displayed.

LePine and van Dyne's (2001) model has also been employed to explain variance in team members' behavioral responses when they noticed somebody was poorly performing. Taggar and Neubert (2008) had participants watch a video in which five actors worked on a group task and each actor displayed behaviors representing low conscientiousness combined with either low or high cognitive ability. The participants were asked to imagine that they were part of the team with the five actors and to rate every actor on the same variables: free-riding, attributions, emotions, expectations, behavioral intentions, and actor performance. Consistent with predictions derived from LePine and van Dyne's (2001) model, they found that the actors who exhibited high cognitive ability and low conscientiousness were more likely to be perceived as free-riding than were actors showing low cognitive ability and low conscientiousness. Furthermore, the free-riding perceptions were found to be positively related to participants' *internal* and *controllability* attributions and negatively related to *stability* attributions. *Controllability* was positively related to *anger* but negatively related to *sympathy* while *willingness to help* was positively related to *sympathy* but negatively related to *anger*. In other words, when low-performers with high cognitive ability and low conscientiousness are perceived as free-riding, teammates' attribution to high controllability would lead to anger and intentions to punish; when low-performers with low cognitive ability and low conscientiousness are not perceived as free-riders, teammates' attribution to low controllability leads to sympathy and intentions to help. That said, when low-performers contribute less than expected, low-performers are more likely to be

perceived as free-riders when they have high cognitive ability as compared to low cognitive ability, but they seem to contribute less than they possibly could.

Whereas most of the empirical studies reported above used a vignette methodology to test LePine and van Dyne's (2001) model, Gupta (2012) conducted a lab experiment in which participants had real interactions with a noncontributing member and she found similar results as did the prior research. She had three-person teams to solve a task while using computer-mediated communication. One of the three members was a confederate who made a comment reflecting either low ability and high effort or low effort and high ability. Gupta also manipulated the team's transactive memory structure, operationalized as a kind of knowledge similarity among teammates: *integrated*, meaning all members shared the same information about all functional areas vs. *differentiated*, meaning each member was given information about just one area. It was found that teams compensated less, coerced more, had more conflict and negative interactions with noncontributing members who exhibited low effort and high ability than with the ones exhibiting low ability and high effort. In addition, teams with integrated transactive memory structure compensated more and facilitated less than teams with differentiated transactive memory structure. These findings indicate that team members' responses to the noncontributing member are a function of the causal attribution that team members' make and to what extent they share common knowledge with the noncontributing member. If team members share the same knowledge, they tend to do the work for the noncontributing member; if team members have different knowledge, they tend to facilitate for the

noncontributing member to do their job.

So far, I have reviewed the development of attribution theory and its application to the organizational context, with special focus on how peers make causal attributions of low-performing colleagues' behaviors. The empirical findings provide strong evidence that the individual characteristics of the problematic team members, specifically their level of their ability and effort, will influence how their peers attribute the cause of the problematic behaviors, which in turn, influence their peers' affective responses and behavioral responses toward them. Next, I will discuss three common issues among the attribution research reviewed above.

### **Issues in Attribution Research**

#### **Imagined vs. real interactions.**

Hypothetical scenarios have been the common experimental approach in attribution research, but will people really respond to their problematic teammates in real life as they do in imaged teams? When participants were asked to imagine that they were part of the team in hypothetical scenarios, they were nevertheless not sharing any responsibility or task interdependence with the team members. The only two studies that placed participants in real teams were Gupta (2012) and the second study reported in Taggar and Neubert (2004). It could be argued, however, that the participants in Gupta (2012) did not really interact with the noncontributing members (the confederates). The confederates identified themselves at the start of the task, made the statement reflecting either low ability or low effort five minutes after the

instructions, and were then silent for the remainder of the session. Even if there had been interaction, could it be considered real, given it was scripted?

Although Taggar and Neubert (2004) studied bona fide student teams in the field, they examined only the part of LePine and van Dyne's model related to the link between the characteristics of the low performing member and peers' behavioral responses to that member. Despite the fact that Heider (1958) suggested we could build the knowledge of scientific psychology based on common sense psychology, I think attribution scholars should find support not only through scenario methodology in which participants probably use their common-sense to guess how they would respond to a person in a scenario but also through lab or field experiments where observers and actors have real interactions, which will allow us to study how people really respond under certain circumstances.

### **Individual characteristics given vs. discovered.**

Much attention in attribution research has focused on ability and effort as explanations for individual success and failure (e.g., Heider, 1958; LePine & van Dyne, 2001a; Weiner, 1985). A frequently used experimental approach has involved manipulating these two characteristics in actors (e.g., Gupta, 2012; Taggar & Neubert, 2004) and measuring observers' perceptions, but this approach does not take into account that observers may have pre-conceived judgments, however biased or not, toward the low-performer's characteristics, which in turn, may influence observers' attributions, affective responses, and behavioral responses. Suppose people are not

provided with any causal information (e.g., lack of ability or effort), people may already have pre-conceived bias when they make causal attributions of another person's negative behavior. For example, Mitchell and Wood (1980) found that supervisors tended to blame subordinates rather than situations when medical incidents occurred. Notice that they did not provide participants with a specific cause in the experiment, neither lack of ability or lack of effort, when they asked participants to evaluate how important they felt the nurse's personal characteristics/the characteristics of the situation were the underlying causes of the behavior described in the incident. Their findings, as I suggested previously, illustrate what fundamental attribution error is (Jones & Harris, 1967; Ross, 1977), the tendency to overestimate disposition-based causes and underestimate situational-based factors. The question then becomes how to capture people's pre-conceived judgments of the low-performer's characteristics. More importantly, what factors may aggravate this type of attribution error?

The experimental approach that provided participants with causal information, either in the context of strangers or ongoing working group, may not be able to capture how people make attributions in ad hoc teams where team members didn't really know each other before. The approach of providing participants with direct causes of why a stranger or an acquaintance needs help in order to understand how they decide to help or not (e.g., Weiner, 1980b) makes perfect sense because this is exactly how people may be requested to offer help in the real world. Similarly, giving participants the causal information about the individual characteristics of a low-performing colleague

to understand how peers may react in ongoing work group (e.g., Jackson & LePine, 2003) is an appropriate manipulation as well, because the manipulation simulated the information that people could collect when making causal attributions. When people encounter a low-performing colleague in standing teams as compared to ad hoc teams, they could collect information about the individual characteristics about this colleague (e.g., lack of ability or effort) because they have more opportunities to understand each other's past history and becoming more familiar with one another (cf. Goodman & Leyden, 1991). The question is how people make causal attributions when they are in ad hoc teams where people did not know each other before and thus have limited opportunity to collect information. After all, rarely would people in the real world be directly given the individual characteristics of certain teammate as potential causes for their low group performance, nor would people in ad hoc teams be provided with as much opportunity as people in standing teams to seek out information about the noncontributing team member. That said, how do people in ad hoc teams decide what they are going to do with a team member who does not contribute as much as the rest of the teammates? Moreover, what factors may influence people's motivation and ability to collect information about the non-contributors in ad hoc teams where people did not know each other before? These are the primary research questions addressed in this dissertation.

Ad hoc teams, such as special committees, trauma or rescue teams, project-based IT teams and consulting teams, or cockpit crews, which work on specific task for a limited time period and disband once the tasks are done (McGrath, 1984), work

in constantly changing compositions (Hackman, 1993). Ad hoc teams have been a common form in various domains, including business, IT, military, and so on. With the advance of technology, the concept of ad hoc human teams mixed with autonomous agents (robots) or ad hoc autonomous agent teams (e.g., Barrett, Agmon, Hazon, Kraus, & Stone, 2014; Stone, Kaminka, & Rosenschein, 2010) have made the research in ad hoc human teams increasingly important. From the work of this new research domain, it seems that these researchers have been trying to model after how ad hoc human teams work and communicate so that they can build ad hoc autonomous agents to work with previously unknown teammates (Santarra, 2016; Stone et al., 2010). As a team scholar, understanding how ad hoc human teams work, especially how people make causal attributions of someone who is not contributing as much as expected in ad hoc teams, given zero knowledge of each other, can provide building blocks of future (either human, mixed, or purely agents) team research.

### **Motivation and ability to make causal attributions.**

Given that the setting of LePine and van Dyne's (2001) attributional model is assumed in ongoing workgroups, the assumption behind the interdependent and ongoing relationships between colleagues is that colleagues have the *ability* and *motivation* to evaluate whether the cause of a colleague's low performance is due to low ability or low conscientiousness. As I described in the last section, teammates' *ability* to make judgement about low-performer's individual characteristic could be hindered once the setting changes from ongoing workgroup to ad-hoc teams with zero history and limited time to get to know each other before they begin the task.

In addition to ability, teammates' *motivation* may also decrease when the setting changes from ongoing workgroup where colleagues have interdependent and ongoing relationships to teams without such interdependency and prospect of future relationship. Compared to standing teams, ad hoc teams have a clear endpoint and a potentially shorter amount of time spent on the specific task with teammates. That said, people that only work together for a single project may not have the incentive to learn more about each other than the necessary in order to get work done, as compared to people who work in standing teams and share responsibilities with each other in every project. Suppose the prospect of future interaction may influence the incentive to seek out information about the low-contributing individual, given that aforementioned research has shown that information about the characteristics of the non-contributor will influence people's attributions and eventually their behavioral responses toward the non-contributor. People's behavioral response toward a low-performer may thus vary depending on the prospect of future relationship. As noted in LePine and van Dyne (2001), people can choose to walk away and not offer help toward a stranger, but avoidance may be risky in ongoing workgroups. In the same way, are certain behavioral responses such as rejecting the low-contributing member more feasible in ad hoc teams than in standing teams where people don't expect to see each other after they finish the project at hand?

To summarize, ad hoc teams differ from standing teams in terms of (a) how well team members know each other previously, and (b) the prospect of future interaction. While these two factors may influence people's ability and motivation to

make attributions, which in turn, will influence their affective and behavioral responses toward the low-contributing individual, we do not know how LePine and van Dyne's (2001) attributional model, which focused on the interdependent and ongoing relationships between colleagues, will change. Given that LePine and van Dyne's (2001) research did not consider the dimensions of expectations for future interaction and interdependency in their attributional model, their model may not apply to ad hoc teams. To understand how people in ad hoc teams make attributions of low-contributing members, I examine whether and how the attribution model of peer response varies when the *prospect of future relationship* and *interdependency* changes in this dissertation. These two factors are related and yet distinct. When people are involved in teams with anticipation for future interaction, their interaction frequency increases as well. When people work in teams with high interaction frequency, their anticipation for future interaction also raises. Nevertheless, high anticipation for future interaction does not necessarily ensure high interaction frequency. People can have low interaction frequency while having anticipation for future interaction with their team members. In the next section, I present the revised attributional model as well as my hypotheses.

### **The Present Research**

In brief, I propose that the *prospect of future relationship* and *interaction frequency* influences teammates' motivation and ability to collect information to make a judgment of a low-contributor's ability and conscientiousness. Built on LePine and van Dyne's (2001) attributional model, I added these two factors that I propose which

would moderate the extent to which people collect information about the low-contributor in teams. Figure 1 illustrates the proposed theoretical model, adapted from LePine and van Dyne (2001). In the following sections, I first discuss how the prospect of future interaction may influence the whole attribution process and then how interaction frequency may impact people's ability as well as motivation to make causal attributions while laying out my hypotheses. The last section of this chapter is devoted to discussing the possibility of changing teammates' attributions.

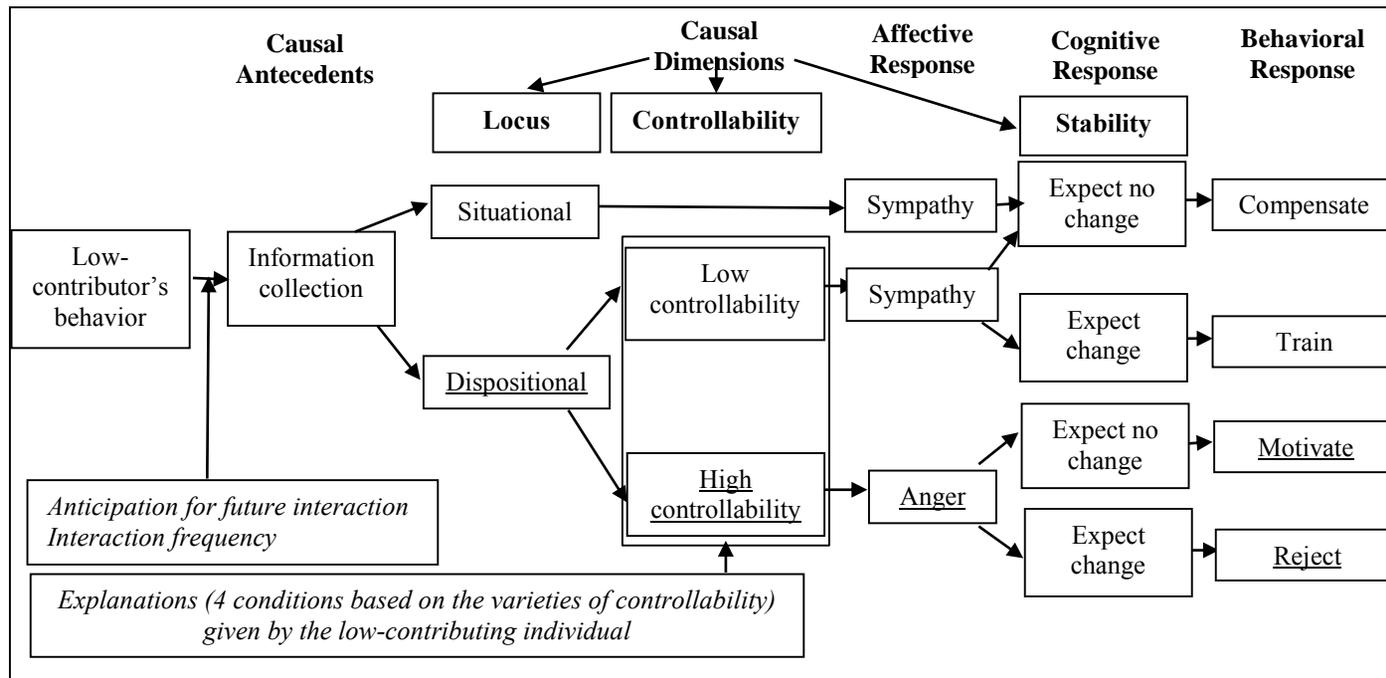


Figure 1 Conceptual model of hypothesized relationships

Adapted from "Peer Responses to Low Performers: An Attributional Model of Helping in the Context of Groups," by J. A. LePine and Linn van Dyne, 2001, *Academy of Management Review*, 26, p.68. Copyright 2001 by Academy of Management.

Note. The variables in Italic are proposed by the current study.

### **Motivation to Make Causal Attributions: Anticipation for Future Interaction**

The prospect of future interaction has been found to influence people's motivation to make attributions (Berscheid, Graziano, Monson, & Dermer, 1976; Harvey, Yarkin, Lightner, & Town, 1980; Yarkin-Levin, 1983), but it is not clear how the attribution content will be influenced by it. The assumption in the attribution literature is that the attribution process begins when people want to have a better control of their social environment and reduce uncertainty to make things more predictable when interacting with others (Heider, 1958; Kelley, 1972). When there is a new person being introduced into an observer's social environment, the extent to which the observer would spend the time and effort to make causal attributions of this new person's behavior can be a function of anticipation for future interaction with this person (cf. Thibaut & Kelley, 1959). Research has shown that participants under the condition of high anticipation for future interaction paid more attention to the target (Berscheid et al., 1976), took longer time to respond (Monson, Keel, Stephens, & Genung, 1982), had better memory recall of the target's characteristics and behaviors (Harvey et al., 1980), and made more extreme (Monson et al., 1982) and more confident trait attributions about the target than did the participants with no such anticipation (Berscheid et al., 1976). These findings indicate that anticipation for future interaction would affect how people make attributions and what attributions they make.

*Dispositional versus situational attributions.* Of particular theoretical importance in prior attribution literature on the impact of anticipation for future

interaction is another argument that observers would make more dispositional than situational attributions about another person as anticipation for future interaction increases (Berscheid et al., 1976; Monson et al., 1982). Attribution scholars believe that knowledge of another person's dispositional characteristics seems to be more helpful than situational factors for observers who want to have a better control of their social environment and hence people would make more dispositional attributions as the probability of future interaction increases (See Berscheid et al., 1976; Monson et al., 1982; Shaver, 1975). Though no one denies the plausibility of this hypothesis, the way previous empirical investigations tested it should be discussed because they did not present participants with questions related to situational factors along with the trait questions. If participants were only presented with trait questions, the conclusions that participants in anticipation condition were more likely to make dispositional attributions (as opposed to situational attributions) than participants in no anticipation condition could not be drawn. Take Berscheid et al.'s (1976) study as an example, they only presented participants with 15 bipolar trait questions such as warm-cold and strong-weak, and made comparisons on the extremity and confidence of those dispositional ratings between participants with anticipation for future interactions and participants without anticipation. Participants were not asked to provide their responses to questions about situational attributions. Similarly, Monson et al. (1982) also presented participants with questions only related to the target's traits (e.g., cooperative or competitive) and compared participants' perceptions of the target's trait position under the condition of prospects of future interaction versus the condition of no such prospect. The findings that participants in anticipation condition made more

number of dispositional attributions and more extreme dispositional attributions than did participants in no anticipation condition could not be used to support the argument that observers' tendency to make dispositional rather than situation attributions increase as anticipation for future interaction increases. The prior findings were the differences in the rating of dispositional attribution alone whereas the argument was about the comparison between two different types of attributions: dispositional versus situational attributions. Unless they had used the measure of *locus*, for example, where a higher score indicates dispositional and a lower score indicates situational attribution, they couldn't draw the conclusions that anticipation for future interaction would lead to the preference to make dispositional attributions rather than situational attributions.

Whether the type of attribution people make will be influenced by anticipation for future interaction awaits to be investigated. So far, there has been no study that I know of that provided participants with questions regarding both dispositional and situational attributions and found such effect. For example, Harvey et al. (1980) took the approach to let participants jot down any attributions about a target. They found that participants made more attributions when they expected to interact with the target in the future than when they had no such expectation. However, there was no effect of future interaction expectation on the type of attribution made.

Along this line of argument that acquiring knowledge of another person's dispositional characteristics would be more helpful than situational factors for people who anticipate to interact in the future (Berscheid et al., 1976; Monson et al., 1982;

Shaver, 1975), it can be tested whether anticipation for future interaction will influence information collection process and locus attribution such that high anticipation will lead to more dispositional information collecting and more dispositional attributions than situational attributions. I therefore propose the first hypothesis to test how anticipation for future interaction will increase the tendency to make dispositional attribution:

H1 Anticipation for future interaction will be positively related to the likelihood that people will attribute the cause of a member's low-contribution to a dispositional cause rather than a situational cause.

Suggested by the aforementioned empirical findings that anticipated-interaction participants had better attention and memory recall of the target (Berscheid et al., 1976; Harvey et al., 1980; Monson et al., 1982), a competing hypothesis based on the dual-process models argument can be proposed. The findings that people's interests in making causal attributions increases with their anticipation for future interaction with the target (See Berscheid et al., 1976; Monson et al., 1982; Shaver, 1975) indicate the possibility that people may invest more cognitive energy in whom they expect to have future interactions with than in whom they have no such expectation.

According to dual-process models (e.g., Chaiken, Liberman, & Eagly, 1989; Kahneman, 2011; Petty & Cacioppo, 1986), there are two modes of information processing: (a) systematic processing, which is a controlled, high-effort, rule-based

process in which the judgment-relevant information is considered comprehensively, and (b) heuristic processing, which is characterized by relatively automatic responses, low effort considerations, and reliance on rules-of-thumb and associations to make judgments. This body of literature suggests that the level of personal involvement with the judgment target plays an important role in whether one or the other mode of information processing is activated. Chaiken et al. (1989), for example, found that systematic processing plays a stronger role than heuristic processing as the degree of people's involvement with a topic increases. In line with dual-process models therefore, judgments of a low-contributing teammate with whom people anticipate to interact in the future may evoke more systematic processing than heuristic processing. I therefore argue that people with future anticipation will have higher motivation to collect information to make causal attributions of their teammate's low-contribution than people with no such anticipation.

When there is no anticipation for future interaction, as compared to when there is anticipation, people may be more likely to make the fundamental attributional error due to heuristic processing. The reason is that when systematic processing is adopted, more cognitive energy is invested; when heuristic processing is adopted, fundamental attribution error (Jones & Harris, 1967; Ross, 1977), the tendency of overestimating disposition-based causes and underestimating situational-based factors, may be more likely to occur. As found by Moran, Jolly, & Mitchell (2014) when people make fundamental attribution error, the brain regions associated with spontaneous information processing about the other person are activated consistently. They

suggested that heuristic processing may underlie fundamental attribution error. Given that people with anticipation are more likely to adopt systematic processing, according to dual-process model, they should be less likely to commit fundamental attribution error than people with no anticipation. People with anticipation may make more of an effort to pay attention to all available information, dispositional factors and situational factors, and process it more comprehensively, than people with no anticipation. For example, when seeing a low-contributing member in ad hoc teams, people who anticipate to work with the low-contributor in the future may be more likely to seek out information about the low-contributor as well as if there is any situational factor that contributed to the problem of low-contribution than people who do not have this anticipation. When people with anticipation take into consideration all kinds of information at hand and process the information more comprehensively, as compared to people with no anticipation, they may be less likely to commit fundamental errors, making dispositional attribution as the default. I therefore hypothesize that when people have no anticipation for future interaction they are less likely to make the effort to collect information for causal attributions from the social environment. As a result, the likelihood of committing of the fundamental attribution error – attributing the cause of low-performing behaviors to something that is dispositional rather than situational – will increase. The dual-process model therefore leads to the following competing hypothesis against H1:

H2 Anticipation for future interaction will be negatively related to the likelihood that people will attribute the cause of a member's low-contribution to a dispositional cause rather than a situational cause.

*Controllability attributions and affective responses.* The next step after people make locus attributions (dispositional vs. situational) is controllability attribution (See Figure 1 for the theoretical model). According to Weiner (1980a, 1995), controllability and stability attributions become related only when observers attribute the cause to be something that is internal. Regarding controllability attributions, LePine & van Dyne (2001) proposed that observers who think the target's behaviors reflect low ability will tend to judge the behaviors as low in controllability, whereas behaviors that reflect low conscientiousness will be attributed as high in controllability. This hypothesis has received some empirical support (e.g., Jackson & LePine, 2003; Taggar & Neubert, 2004). According to Weiner (1986), the affective responses of feeling *sympathy* or *anger* result from the controllability attributions. Research has suggested that people would feel angry (as opposed to sympathetic) and not willing to offer help if the cause is lack of effort, because this is the kind of cause which is perceived as something that is controllable rather than uncontrollable (e.g., Reizenzein, 1986; Weiner, 1980b). Jackson and LePine (2003) also found that participants were less *sympathetic* and more likely to *reject* the low-performers when the low-performers were perceived as low-motivated, irrespective of their ability. The questions that I want to raise here are how people in ad hoc teams make a judgment of the low-performer's ability (or cognitive ability) and conscientiousness (or motivation) if they had no clue what the

level of the target's ability or motivation was and how the prospect of future relationship may influence controllability attributions.

Regardless of the target's ability, people may be more likely to release their anger toward the target when people have lower than high anticipation future interaction with the target. In Jackson and LePine's (2003) study, they noted that when peers did not understand the cause of the low-performer's behaviors, they tended not to give the benefit of the doubt to the peer who seemed to have low motivation, no matter what. Such hostile emotional and behavioral responses may be more common in ad hoc teams where the anticipation for future interaction is lower than in teams where the anticipation is higher, because there is no need to leave room for not jeopardizing potential relations when people have no reason to anticipate working together in the future. Thus, I hypothesize that people will be more likely to attribute the cause of a low-contributing individual's behaviors to something that is controllable, which will, in turn, make them feel angry when they have a low or no expectation for future interaction than people with higher expectation.

***Behavioral responses.*** Affective responses as well as stability attributions will decide teammates' behavioral responses toward the low-contributing individual (LePine & van Dyne, 2001). Recall that Weiner (1985) defined *stability* attribution as the causal dimension that people use to consider whether the cause is something that is constant or variable. It is because stability attributions can influence people's cognitive responses such that people will have high expectancy for change if they attribute the cause of low-contributing behaviors to be something that has low

stability; people will have low expectancy for change if they attribute the cause to something that has high stability. How people make stability attributions therefore has a domino effect on subsequent behavioral responses (LePine & van Dyne, 2001).

In addition to the stability attributions, people's behavioral response toward the low-performer also depends on their affective response. According to LePine & van Dyne's (2001) model, when people experience sympathy, which results from the attribution of low controllability, people will either *compensate* the low-performer's work (under the condition of high stability: expect no change) or *train/coach* the low-performer to help them catch up with the task (under the condition of low stability: expect change). When people experience anger, which results from the attribution of high controllability, the model suggested that people will either *reject* the low-performer (under the condition of high stability: expect no change) or *motivate* the low-performer with varying degrees of aggressiveness (under the condition of low stability: expect change). Given that effort is a cause which can be perceived as unstable (e.g., temporary exertion) as well as stable (e.g., long term effort) according to Weiner (1986), I hypothesize that rejecting and motivating are both potential behavioral responses when teammates feel angry as opposed to sympathy about the low-performer. The following hypotheses are proposed:

H3 When people encounter a low-contributor in a team that has *no expectation for future interaction*, compared to a team with high expectation for future interaction, they will then be more likely to attribute the cause of the low-contributing behavior to be something that is (a) *high in controllability*

*rather than low in controllability*; (b) they are more likely to feel *anger* (c) rather than *sympathy*; and (d) they are more likely to *motivate* or *reject* the low-contributor (e) as opposed to compensating the low-contributor's work or training the low-contributor.

Whereas the aforementioned discussions ask how people will make causal attributions of low-contributing individuals' behaviors when their *motivation* varies with the anticipation for future interaction, the following section will discuss how people's *ability* and *motivation* to make causal attributions might be influenced, given different anticipation for interaction frequency.

### **Ability and Motivation to Make Causal Attributions: Interaction Frequency**

How often teammates "can" interact with the target may influence teammates' *ability* and *motivation* to collect information about the target to make causal attributions of the low-contribution. Uncertainty may arise when people notice that there is a low-contributing individual in their team and they don't know why and to what extent this lack of contribution will impact the team's outcomes. There can be individual differences in the level of uncertainty tolerance toward this matter and the importance of the team outcome. However, according to URT (Berger & Calabrese, 1975), if people experience uncertainty in interpersonal settings, they will want to reduce the uncertainty by communicating with the target as a way to seek more information. The theory predicts, as the amount of verbal communication increases, the amount of uncertainty will decrease (Turner & West, 2011). Applied to the team context, teams which interact more frequently, compared to teams which interact less

frequently, should provide more opportunities for interaction so members can seek more information to reduce their uncertainty.

*Dispositional or situational attributions.* When teammates have more opportunities or the ability to collect information about the target and the social environment, they may be less likely to make dispositional attribution than observers without this ability. As we know from the literature in actor-observer bias, the level of familiarity between observers and the target would decrease the likelihood of the bias (Fiedler, Semin, Finkenauer, & Berkel, 1995; Prager & Cutler, 1990); that is, the likelihood that observers make dispositional attribution as the default should decrease as they get to know how the target behave across situations as new information being considered (Heider, 1958). In addition, the expectation to have higher than lower interaction frequency may also influence the “motivation” to collect more information about the target in different situations in order to have better control of the social environment. This may decrease the likelihood of only focusing on the dispositional factors. Interaction frequency of meetings could have implications for personal involvement. The meetings that people take time to attend more often may indicate that those meetings are more important than others. It is therefore likely that the motivation for people to collect information about the low-contributor may increase with the meeting frequency when people want to have better control of the social environment. Given that the higher interaction frequency may influence people’s ability and motivation to collect more information about the target to make causal attributions, I hypothesize that people will be less likely to make dispositional

attribution as the default choice when they expect to have higher than lower interaction frequency with the target.

H4 Anticipation for interaction frequency will be negatively related to the likelihood that people will attribute the cause of a member's low-contribution to a dispositional cause rather than a situational cause.

*Controllability attributions, affective and behavioral responses.* The likelihood of people releasing their anger toward the low-contributor in teams and reject the low-contributor may decrease as their meeting frequency increases. As described previously, it was found that people tended not to give the benefit of the doubt to a colleague who seemed to have low motivation, irrespective of the colleague's ability (Jackson & LePine, 2003). Also, according to LePine and van Dyne's (2001) model, people will either *reject* the low-performer or *motivate* the low-performer when people experience *anger*, which results from the attribution of high controllability, when people think the target's behaviors reflect low motivation. It can be argued that this kind of negative emotional and behavioral response could be more common in teams which are expected to have lower interaction frequency than in teams which have higher interaction frequency. When people don't need to worry about facing the target again and again in the frequent meetings, releasing their anger or rejecting the target doesn't seem to be a risky move. When people meet less often, their concerns about the need to maintain face at work or repairing the relationship may also decrease. Thus, I hypothesize that people will be more likely to attribute the cause of a low-contributing individual's behavior to something that is controllable,

which will, in turn, make them feel angry and choose to reject or motivate the target when their team has lower than higher interaction frequency. The following hypotheses are proposed:

H5 When people encounter a low-contributor in a team with *lower interaction frequency*, compared to a team with higher interaction frequency, they will then be more likely to attribute the cause of the low-contributing behavior to be something that is (a) *high in controllability rather than low in controllability*; (b) they are more likely to feel *anger* (c) rather than sympathy; and (d) they are more likely to *motivate* or *reject* the low-contributor (e) as opposed to compensating the low-contributor's work or training the low-contributor.

From the discussions above, I've made predictions regarding the effects of the prospect of future relationship and interaction frequency on the attributions the teammates may make, their affective responses, and potential behavioral response toward low-contributors in teams. In addition to the competing hypotheses that I proposed regarding the impact of anticipation for future interaction on locus attribution, I also predicted that anticipation for future interaction and interaction frequency will be negatively related to the likelihood that people attribute the cause of low-contributing member's behavior to something that is high in controllability, which results in more anger and higher likelihood to reject the low-contributor. In the following section, I'd like to discuss the possibility to negate the attributions that

teammates made by providing them with new information directly from the target and the extent to which doing so can alleviate negative emotional responses.

### **Dynamic Processes in Attributions**

It is important to investigate the influence of explanations given by the low-contributing individual on team members' attribution, because attribution process is interactive and can be dynamic. While it is clear that a group is not made up of just one-person's monologue but rather it is an interactive process where information is constantly exchanged, we need to ask if the way we study attribution in groups really captures the essence of it. The traditional approach of attribution scholars examining the link from attributions, through affective responses, to behavioral responses is having participants provide their responses after reading a scenario in which a situation reflecting different combinations of the causal dimensions (e.g., internal/external, (un)controllable, (un)stable). Participants were asked to imagine, for example, being approached by a student asking to borrow class notes (e.g., Reizenstein, 1986; Weiner, 1980b), seeing someone who may need help on the subway (e.g., Reizenstein, 1986; Weiner, 1980a), or being asked by an acquaintance to borrow money for rent (e.g., Meyer & Mulherin, 1980). Regardless of what scenarios experimenters employed, we see that participants were asked to make causal attributions based on a specific cause described in the scenario provided by experimenters. While the prior experimental approach makes attribution process as one-sided and static, which may overlook the interactive component of the

interpersonal interaction (Wood & Mitchell, 1981), this dissertation research aims to study attribution process as interactive and continuing.

The causal attribution that people make does not need to be a one-time decision. Team members may have preliminary thoughts about why low-contributors behaved in a certain way and make causal attribution based on the information at hand. As suggested by Heider (1958) sometimes people need to extend their observation in time and through various events to make adequate attributions. Thus, it is very likely that more information, such as an explanation provided by low-contributors themselves, may change how team members make causal attributions. When people seek information about the low-contributor, spurred by the need to reduce their uncertainty about the target person and the social situation, their attributions may change. Suppose the new information provided by the low-contributors themselves can help teammates understand the low-contributor and the situation more, which in turn, may change the previously-made attributions, we then will have opportunities to understand how to avoid the negative emotional and behavioral response towards the low-contributor and examine if there is a better way to maintain good group dynamics as well as group performance.

Teammates' affective and behavioral responses toward the low-contributors in teams, if not properly handled, may impact the team dynamic and team effectiveness. From the empirical findings of Jackson and LePine (2003), we know that participants tended to reject the low-performer whose behaviors seem to suggest lack of motivation, regardless of the low-performer's ability. While rejecting the low-

performer can be a way to release people's anger, teams nevertheless lose the needed manpower completely. Furthermore, research has suggested that even though people could compensate the free-rider's work, facing free-riders in teams still made people feel powerless about the negative impacts of free-riders' distractive and disruptive behaviors on team performance (Jassawalla et al., 2009) and people tend to feel quite negative about teamwork afterwards (Pfaff & Huddleston, 2003). To utilize all the possible manpower and to prevent team members from feeling negative toward teamwork, it can be useful to know what type of explanation can prevent team dynamics from being negatively impacted and save the low-contributing individual's face so that team members can still work together. Taking LePine and van Dyne's model as a blueprint, the explanation given by the low-contributing individual should be able to prevent groups from becoming angry and resentful at the low-contributing individual (affective response) and rejecting this person (behavioral response). Instead, it is hoped that the explanation given can solicit sympathy as opposed to anger. From the findings of prior research (Barnes, Ickes, & Kidd, 1979; Meyer & Mulherin, 1980; Weiner, 1986), we know that teammates' affective responses depend on controllability attribution. Thus, I examine the explanations that can change teammates' controllability attribution (See Figure 1 for the proposed impact of explanations on controllability).

Based on the research on attribution and helping behaviors (e.g., Meyer & Mulherin, 1980; Reizenstein, 1986; Weiner, 1980a, 1980b), explanations which communicate an *uncontrollable* cause should be more likely to solicit sympathy (as

opposed to anger) and the willingness to help than a *controllable* cause. According to Weiner (1985, 1986), whether one helps another person in need depends on one's judgment of "why" help is needed. If the cause of the need for help is something that is controllable by the requester, people tend to experience anger and don't offer their help. However, if the cause of the need for help is uncontrollable, people will feel pity and tend to offer their help. For example, Weiner (1980b) found that students were less likely to lend class notes to the other student if the reason that the other student skipped the class was because he or she went to the beach (controllable) rather than if the student needed notes because of an eye problem (uncontrollable). Similarly, Weiner, Amrikhan, Folkes, and Verette, (1987) found that participants rated the confederate who arrived at the lab late more positively when the confederate provided participants with an excuse that was uncontrollable (e.g., "The professors in my class gave an exam that ran way over time, and that's why I'm late.") rather than a controllable one (e.g., "I was talking to some friends I ran into in the hall, and that's why I'm late."). In general, explanations given in order to ascribe the cause of problem (e.g., low-contributing behaviors) to something that is *uncontrollable*, either an external factor (e.g., blame the instructor) or an internal one (i.e., the self), are called excuses (Weiner, 1995). From the discussion above, it is reasonable to argue that excuses that communicate the cause of the low-contributing behaviors to something that is *uncontrollable* would solicit more sympathy than explanations that communicate a *controllable* cause (See Figure 1 for the proposed impact of explanations on controllability).

On the other hand, *justification* may provide a better chance to dodge the blame from team members than simply admitting that the cause is *internal and controllable*. Justifications describe accounts in which “the decision maker accepts full responsibility but denies that the act in question is inappropriate by pointing to the fulfillment of some superordinate goal (Shaw et al. 2003, p.445).” To put it differently, justification not only just admits that the cause is internal and controllable but also communicates the mitigating circumstances, such as a student telling a teacher that the reason for failing to study for a test was due to the need to take care of a sick mother (Weiner, 1995) or a team member saying that she didn’t finish her part because she was waiting for additional information that would improve the project substantially (Tata, 2002). Thus, while admitting an internal and control cause may lead to negative affective and behavioral response, explanations that appeal to a higher moral goal while admitting to an internal and controllable cause may mitigate the negative impact and solicit more positive affective and behavioral responses than explanations that simply admit an internal and controllable cause. To compare the effects of three types of explanations on the affective responses: (1) explanations which attributes to something that is *uncontrollable*, (2) explanations which attribute to something that is *internal and uncontrollable* but appeal to a higher moral goal, and (3) explanations which attribute to something that is *internal and uncontrollable*, I propose the following hypothesis

H6 Explanations which attribute the cause of the low-contributing behaviors to something that is *uncontrollable* will (a) solicit the most sympathy and (b)

the least anger from the explanation receivers, followed by *justifications* (i.e., admitting the cause is internal and controllable but communicating a superordinate goal), and then the explanations which attribute the cause to something that is simply *internal* and *controllable*.

Additionally, the explanations provided by the low-contributor may reduce the uncertainty that teammates experienced before the explanations are provided. We know from attribution literature that attribution process begins when people want to reduce uncertainty they experience in the social environment in order to have a better control of the situation (Heider, 1958; Kelley, 1972). Low-contributor's impact on group effectiveness, for example, can be a source of uncertainty. Suppose the teammates know very little about this low-contributor in their teams, the uncertainty they experienced would prompt the teammates to make causal attributions of the low-contributor's behaviors in order to decide what behavioral responses they could have. As suggested by URT (Berger & Calabrese, 1975), people will want to reduce the uncertainty that they experience in interpersonal interactions by seeking more information through communication. The extent to which people can reduce the uncertainty depends on the information they can gather and their interpretation of it. When people have enough information to understand the situation, they have better control of the situation and they can plan their behaviors accordingly; when information is insufficient, people have less control of the situation and they will face more uncertainty. In that case, the explanations, which are given by the low-contributor for their behaviors, should be able to reduce the prior uncertainty that

teammates experienced to some extent. They should feel more confident in their attributions after they receive new information than people who did not receive such information.

Furthermore, the potential impact that the low-contributor's explanations have on teammates may differ according to the level of the uncertainty that teammates experienced before the explanations are provided. That is, the effect of uncertainty reduction provided by the explanations should be greater for people who experience more uncertainty before they receive the explanations. As noted in the previous discussions that the prospect of future interaction may increase people's motivation and ability to make attributions, which may prompt them to have a greater need to collect information in order to make attributions and reduce the uncertainty they experienced. In that case, the explanations provided by the low-contributor are expected to have greater impact, meaning reducing more uncertainty when they make attributions after collecting new information, on people who have higher anticipation for future interaction than on people who have no such anticipation. The reduction of uncertainty can be operationalized by the increase of attributional confidence (Clatterbuck, 1979). I therefore proposed the following hypothesis:

H7 After the low-contributor provides an explanation for the low contribution, recipients of the explanation will have higher attributional confidence than people who did not receive any explanation.

H8 The explanation provided by the low-contributor will provide greater attributional confidence for people with higher anticipation for future

interaction, who experienced more uncertainty before the explanation was provided, than people with no anticipation for future interaction with the low-contributor.

## **Overview of Studies**

I designed two experiments to test the eight hypotheses. In the first study, I examined the effect of *anticipation for future interaction* and *interaction frequency* on attribution process (H1 through H5) through an experiment using vignette methodology. Then, I tested the effect of *anticipation for future interaction* and *explanations* on attribution process (H1 through H3; H6 through H8) in lab group experiment where participants could have real interactions, which may make their need to make causal attributions more real than in hypothetical scenarios, as used in the first study. The methods, results, and discussion of the first study are reported in Chapter 3 and study 2 is reported in Chapter 4.

## CHAPTER 3

### STUDY 1

#### **Methods**

##### **Research design.**

The first study was designed to test H1 through H5: H1 through H3 were to test the effect of anticipation for future interaction and H4 through H5 were to test the effect of anticipation for interaction frequency. I conducted an experiment with vignette methodology to examine how anticipation for future interaction and anticipation for interaction frequency affect attributions for the low-contributing individual's behaviors, affective and behavioral responses to the low-contributing behaviors. Vignette refers to "a short, carefully constructed description of a person, object, or situation, representing a systematic combination of characteristics" (Atzmüller & Steiner, 2010, p.128). This approach allows researchers to include only the factors of interest while excluding the confounding ones with the advantage of testing the causal hypotheses. However, this methodology is challenged by some drawbacks such as the problem of reproducing the context of natural setting in hypothetical scenarios, the possibility of getting responses not reflecting the true judgment when participants are not given reference points to compare with, and low external validity (Aguinis & Bradley, 2014). To avoid the major problems such as low external validity and lack of realism, this current study specifically chose the setting of the hypothetical scenario to be a town committee, something that is common in our everyday lives to easy to relate to. Besides, this methodology has been commonly used

in previous research (e.g., Jackson & LePine, 2003; Liden et al., 1999; Taggar & Neubert, 2004). See Appendix A for the IRB approval for this study.

### **Participants.**

Two hundred and forty-five participants were recruited from MTurk to participate in the online experiment in exchange for 1 US dollar. Sixty-one point three percent of the participants were male and 38.7 % were female. Their ages ranged from 18 to 65, with a mode in the 25 to 34 age group. Ninety-four point one percent of participants were from USA, 5.5% were from Asia, 0.4% were from South America.

### **Procedures.**

Participants were provided with a link through MTurk to the online study. First of all, participants were presented with an online consent form. After participants provided the consent, they were randomly assigned to one of the four conditions where they would read a vignette of a team with low contributing member. Then, they were asked to fill out an online questionnaire regarding their judgments about the low-contributing individual's behaviors portrayed in the vignette.

### **Manipulations of independent variables.**

The variables manipulated in the vignettes were: *anticipation for future interaction* (high/low) and *expectation of interaction frequency* (high/low) for a 2 x 2 between-subjects factorial design.

*Anticipation for future interaction.* Ad hoc teams, by definition, have no past history and no expectation for future interaction whereas standing teams work together as teams for longer term (McGrath, 1984). *Past history* and *work term* were the variables that were held constant in this study while the variable *anticipation for future interaction* was manipulated. Participants read the scenario in which they were told that they didn't know anyone in their groups and the appointment of committee member was six months across conditions. Participants in no anticipation for future interaction were told that they didn't expect that they would see any of their group members after this committee appointment ended whereas participants in high anticipation for future interaction were told that they expect that they would see some of their group members in other committees even after this committee appointment.

*Anticipation for interaction frequency.* Anticipation for interaction frequency is defined as the anticipation for the number of times that interaction happens during a particular period. Participants in anticipation for high interaction frequency condition were told that their group met frequently: one day each week the group met to work on the group. Conversely, participants in the anticipation for low interaction frequency condition were told their group didn't meet frequently: twice a month the group met to work on the group.

*The vignette.* All four versions of the vignette contained the same background information about the team and its task. The independent variables were manipulated as indicated by the bold text as follows:

*You are a member of a committee in your town. You didn't know anyone in your group before you received this appointment. **You don't expect that you will see any of your group members after this committee appointment ends. / You expect that you will see some of your group members in other committees even after this committee appointment.***

*The appointment is for 6 months. Your group is responsible for completing a project that will improve the benefits of living in the town. Successful completion of the project requires equal contribution from all members. **Your group meets frequently, one day each week, to work on the project. / Your group doesn't meet frequently, twice a month, to work on the project.** As the project draws to a close, it has become obvious that one member of your group, Pat, is performing poorly. During the committee meetings, you have observed that Pat does not work very hard to help the group complete its activities and achieve its goals. Pat just sits there and doesn't contribute any ideas. Pat comes to the meetings unprepared and often asks for extensions. Pat's poor performance is hindering the productivity of the group. You know that despite this person you have to complete this project on time.*

### **Measures**

The questionnaire included questions for manipulation check (i.e., *anticipation for future interaction, anticipation for interaction frequency*, evaluation of Pat's *motivation*, and *perceived loafing* of Pat), *attributions* (i.e., locus, controllability, and stability: McAuley, Duncan, & Russel, 1992), *affective responses* (i.e., anger and sympathy: Struthers, Weiner, & Allred, 1998), and *behavioral responses* (i.e., train, compensate, motivate, and reject: Jackson & LePine, 2003).

***Manipulation check questions.*** To examine the effectiveness of the manipulation, participants were asked to rate on a 5-point scale, with anchors of 1 = “*strongly disagree*” and 5 = “*strongly agree*” for their *anticipation for future interaction, anticipation for interaction frequency*, their evaluation of Pat's *motivation*, and their *perceived loafing* of Pat. Three questions ( $\alpha = .82$ ) were developed for *anticipation for future interaction*: (a) “It's possible to see some of the

group members in the future.”; (b) “Running into some of the group members on other occasions is unlikely.”; (c) “In the future, it’s likely that I will work with some of the same group members in other groups.” Another three questions ( $\alpha = .89$ ) were developed to measure *anticipation for interaction frequency*: (a) “The meeting frequency of this group is low.”; (b) “Members of this group meet each other often.”; (c) “Members of this group have lots of opportunities to interact with each other.” Three questions were used to measure their evaluations of Pat’s *motivation* (Jackson & LePine, 2003) ( $\alpha = .89$ ): (a) “Pat is motivated to perform well.”; (b) “Pat tries hard to complete team projects.”; and (c) “Pat works hard to achieve team goals.” Another three questions were used to measure their *perceived loafing* of Pat ( $\alpha = .62$ ): (a) “Pat is trying as hard as he/she can.”; (b) “Pat is a free-loader.”; and (c) “Pat is contributing less than I anticipated.”

**Attribution.** Previous studies (e.g., Jackson & LePine, 2003) that tested LePine & van Dyne's (2001) model used Causal Dimension Scale (DFS: Russell, 1982), the attribution scale that was commonly used in attribution research, to measure attribution. Given that the original scale received criticisms about the controllability dimension, the author of the scale developed CDSII (McAuley et al., 1992) , which further differentiated between personal controllability and external controllability. The current study used CDSII to assess how participants attributed the cause of the low-contributing teammate’s behaviors for this version addressed the issue that controllability should be further differentiated into (un)controllable by the person and (un)controllable by other people. There were twelve bipolar phrases in total in this 9-

point scale. Three ( $\alpha = .72$ ) were to assess *locus of causality*: (a) the behavior reflects an aspect of Pat vs. reflects an aspect of the situation; (b) the behavior was caused by something inside of Pat vs. outside of Pat; and (c) the behavior was caused by something about Pat vs. something about other people. I used three items from McAuley et al. (1992) to assess *external control* ( $\alpha = .78$ ): (a) a cause over which others have control vs. over which others have no control; (b) a cause under the power of other people vs. not under the power of other people; and (c) a cause that other people can regulate vs. other people cannot regulate. Another three items from McAuley et al. were used to assess *personal control* ( $\alpha = .82$ ): (a) a cause manageable by Pat vs. not manageable by Pat; (b) a cause that Pat can regulate vs. Pat cannot regulate; and (c) a cause over which Pat has power vs. over which Pat has no power. *Stability* was assessed by three items ( $\alpha = .65$ ): (a) permanent vs. temporary; (b) stable over time vs. variable over time; and (c) unchangeable vs. changeable.

***Affective response.*** Participants' anger and sympathy toward Pat were measured on 5-point scales, with anchors of 1 = "*strongly disagree*" and 5 = "*strongly agree*." Three questions taken from (Struthers et al., 1998) were used to measure anger: (a) "I feel mad towards Pat"; (b) "I feel upset towards Pat"; and (c) "I feel angry towards Pat" ( $\alpha = .88$ ). I used three items from Jackson and LePine (2003) to measure sympathy: (a) "I feel sympathy towards Pat"; (b) "I feel pity towards Pat"; and (c) "I feel concern for Pat" ( $\alpha = .77$ ).

***Behavioral response.*** I measured participants' behavioral responses toward Pat by the items developed by Jackson and LePine (2003) and adapted for the context of

this study. Participants were asked to rate how likely they would engage in each of the responses on a 5-point scale, with anchors of 1 = “*highly unlikely*” and 5 = “*highly likely*.” *Compensate* ( $\alpha = .96$ ) was assessed by four items: (a) “Take on some of Pat’s duties as your own”; (b) “Pitch in and do some of Pat’s job”; (c) “Do what you can to get Pat’s work done”; and (d) “Complete unfinished tasks of Pat’s.” Four items were used to measure *train* ( $\alpha = .90$ ): (a) “Teach Pat how to do the work”; (b) “Show Pat a more efficient way to complete the task”; (c) “Teach Pat how to prioritize responsibilities”; and (d) “Provide Pat with the best way to complete the work.” *Motivate* ( $\alpha = .91$ ) was assessed by four items: (a) “Tell Pat that poor performance will no longer be tolerated”; (b) “Point out the consequences of poor performance to Pat”; (c) “Ask Pat to work harder”; and (d) “Explain to Pat that poor performance is unacceptable in this groups.” Four items were used to assess *reject* ( $\alpha = .88$ ): (a) “Exclude Pat from social functions with the group”; (b) “Act as though Pat is no longer a member of the group”; (c) “Ignore comments and suggestions made by Pat”; and (d) “Avoid interactions with Pat.”

## **Results**

### **Manipulation check.**

There were two hundred and forty valid cases in the dataset of the first study, after removing four incomplete cases. It was expected that participants in the no anticipation for future interaction condition would have lower expectation to see their group members than participants in the high anticipation for future interaction condition. A one-way ANOVA was performed with treatment condition as the

independent variable and a composite variable which consisted of the three manipulation check questions for *anticipation for future interaction* as the dependent variable. The results showed a significant treatment effect,  $M_{\text{no}} = 2.70$ ,  $M_{\text{high}} = 3.92$ ,  $F(1, 238) = 133.55$ ,  $p < .01$ ,  $w^2 = .36$ . As expected, participants in the no anticipation for future interaction condition had lower anticipation to see each other than participants in high condition.

Another one-way ANOVA was conducted with treatment condition as the independent variable and a composite variable of the three questions which measured participant's *anticipation for interaction frequency* as the dependent variable. As expected, the results showed a significant treatment effect,  $M_{\text{low}} = 2.14$ ,  $M_{\text{high}} = 3.62$ ,  $F(1, 238) = 178.823$ ,  $p < .01$ ,  $w^2 = .43$ .

Additionally, it was also expected that participants in each condition would not perceive *Pat*, who was described as a low-contributor in the team in the scenario, differently in terms of *Pat's motivation* to finish the work and the extent to which *Pat* was loafing. As expected, the results didn't show any significant difference in *Pat's motivation*,  $M_{\text{no future/high frequency}} = 1.79$ ,  $M_{\text{no future/low frequency}} = 1.71$ ,  $M_{\text{high future/high frequency}} = 1.70$ ,  $M_{\text{high future/low frequency}} = 1.60$ ,  $F(3, 238) = .57$ ,  $p = .64$ ,  $w^2 = -.01$ , or the *perceived loafing of Pat*,  $M_{\text{no future/high frequency}} = 4.24$ ,  $M_{\text{no future/low frequency}} = 4.16$ ,  $M_{\text{high future/high frequency}} = 4.22$ ,  $M_{\text{high future/low frequency}} = 4.21$ ,  $F(3, 238) = .16$ ,  $p = .92$ ,  $w^2 = -.01$ .

### **Data analysis strategy.**

The effect of attribution on behavioral responses through affective responses, has been established in previous attribution literature (e.g., Jackson & LePine, 2003; Weiner, 1985, 1986) and a goal of my research was to examine how anticipation for

future interaction and interaction frequency would affect this the relationship. More specifically, my research was designed to test the hypotheses regarding the effect of *anticipation for future interaction* (H1 through H3) and *anticipation for interaction frequency* (H4 through H5) on attribution (*locus, personal controllability*), affective response (*anger, sympathy*), and behavioral responses (*train, compensate, motivate, reject*).

Before testing the hypotheses, I used correlation analysis to help me understand the relationship between variables. To test the hypotheses, I planned to use one-way ANOVA to compare group means. Additionally, to explore the moderated effect of anticipation for future interaction and interaction frequency on the attribution model, I used Hayes' (2013) PROCESS macro for SPSS to test the moderated mediation effect. Hayes' (2013) PROCESS macro, a regression based analysis, could be used to test the moderated mediation effect with bootstrapping technique, which would generate the information of confidence interval (CI) to estimate if the effect is statistically significant.

#### **Preliminary data analysis.**

I first conducted exploratory factor analysis (EFA) to make sure that the computer extracted the correct number of factors based on theory. I then conducted reliability analysis to evaluate the reliability of each of the composite variables, including *anger, sympathy, locus, external controllability, personal controllability, stability, train, compensate, motivate, and reject*, before I standardized the average scores of the corresponding items. The items included in each of the composite

variables and the corresponding Cronbach's  $\alpha$  are reported in Appendix B; the Pearson correlations among the composite variables are reported in Table 1.

Table 1  
*Pearson Correlations for Standardized Composite Variables*

Measure	1	2	3	4	5	6	7	8	9	10
1. Anger	–									
2. Sympathy	-.26***	–								
3. Locus	.41***	-.39***	–							
4. EControl	-.15*	.29***	-.38***	–						
5. PControl	.32***	-.38***	.68***	-.31***	–					
6. Stability	-.03	-.09	.14*	-.03	-.03	–				
7. Train	.02	.30***	-.10	.19**	-.08	-.25***	–			
8. Compensate	-.04	.23***	-.04	.04	-.05	.03	.26***	–		
9. Motivate	.49***	-.19**	.27***	-.09	.30***	-.15*	.16*	-.16*	–	
10. Reject	.26***	-.15*	.16*	-.10	.04	.27***	-.44***	-.04	.17**	–

Note. EControl = external controllability; PControl = personal controllability.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Correlation analysis results showed that the largest correlation effect was between *locus* (higher score indicates dispositional attribution; lower scores indicate situational attribution) and *personal controllability*,  $r = .68$ ,  $p < .01$ . As predicted, the likelihood of attributing the cause of Pat's behaviors to something that was dispositional was significantly related to the likelihood of attributing the behaviors to something that was high in personally controllability. Additionally, consistent with the relationship hypothesized in the model, *locus* had a positive relationship with *anger*,  $r = .41$ ,  $p < .01$ , and a negative relationship with *sympathy*,  $r = -.39$ ,  $p < .01$ ; *personal controllability* had a negative relationship with *sympathy*,  $r = -.38$ ,  $p < .01$ ; people who felt *anger* were more likely to *motivate* the *Pat*,  $r = .49$ ,  $p < .01$ ; finally, people who were more likely to *train* Pat were less likely to *reject* Pat,  $r = -.44$ ,  $p < .01$ .

### **Hypothesis testing.**

Ten sets of one-way ANOVA with *anticipation for future interaction* (no vs. high) or *anticipation for high/low interaction frequency* (low vs. high) as independent variable were conducted on all of the composite variables. Bonferroni correction was applied to the multiple significance tests ( $\alpha = .05/10 = .01$ ) to control the overall Type I error rate. All the hypotheses from H1 to H5e were not supported, except H3e. There was a significant main effect of *anticipation for future interaction* on the likelihood to *train* the low-contributor in the team,  $M_{\text{low}} = -.17$ ,  $M_{\text{high}} = .17$ ,  $F(1, 234) = 7.09$ ,  $p = .01$ ,  $w^2 = .02$ . The results provided evidence to support H3e which hypothesized that people with no expectation for future interaction would be less likely to train the low-contributor than did people with high expectation. The overall results are reported in in Appendix C.

### **Post hoc exploratory data analyses.**

The hypothesized model was that attribution (*locus*, *personal controllability*, *external controllability*, and *stability*) would affect people's behavioral responses to the low-contributor (*train*, *compensate*, *motivate*, and *reject*) through their affective responses (*anger*, *sympathy*), and *anticipation for future interaction* and *interaction frequency* were hypothesized to be moderators in the model. The model that I chose to test the moderated mediation effect assumed that the moderators had effects on each of the paths in the mediation relationship. I chose this model because no prior research had studied the effect of these two moderators before and this model could demonstrate which part of the model differed depending on the levels of the moderator. This model allows multiple mediators, so I entered both mediators, *anger*

and *sympathy*, in each model I analyzed. The four attribution variables (treated as independent variables), the four behavioral variables (treated as dependent variables), and each moderator were entered one at a time. When CI does not contain zero, the effect is significant.

The results showed that, for *anticipation for future interaction* (the moderator), the conditional indirect effects of *locus* on people's intention to *train* the low-contributor, through *sympathy* (the mediator), was stronger in the no anticipation for future interaction condition,  $\beta = -.20$ , boot SE = .06, boot CI = [-.34; -.10], than in the high anticipation for future condition,  $\beta = -.08$ , boot SE = .04, boot CI = [-.17; -.02] (See Figure 2 for the model). The results indicated that people who made situational attribution would be more likely to train Pat. This effect occurred when they felt sympathy toward Pat and this indirect effect was stronger when people had no anticipation for future interaction than did people with anticipation.

In the case of *anger* as the mediator, the conditional indirect effects of *locus* on people's intention to *train* the low-contributor was stronger and significant in the no anticipation for future interaction condition,  $\beta = .10$ , boot SE = .05, boot CI = [<.01; .22], and weaker and not significant in the high anticipation for future condition,  $\beta = .02$ , boot SE = .03, boot CI = [-.03; .09] (See Figure 2 for the model). The results indicated that, for people with no anticipation for future interaction, when they made dispositional attribution, which in turn, resulted in anger, they were more likely to train Pat. However, the anger mechanism was not significant for people who had anticipation for future interaction.

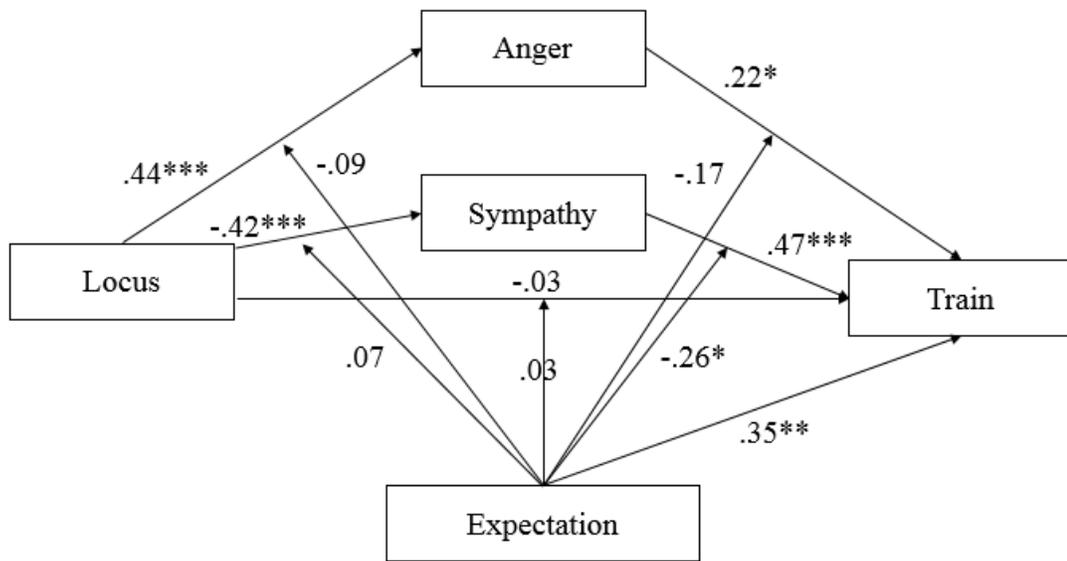


Figure 2 Moderated Mediation Model 1

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

*Personal controllability* was also found to have an indirect effect on people's intention to *train* the low-contributor through *anger* and *sympathy* and such indirect effects varied depending on the moderator, *anticipation for future interaction*. When *sympathy* was the mediator, the indirect effect was stronger and significant in the no anticipation for future interaction condition,  $\beta = -.19$ , boot SE = .06, boot CI = [-.34; -.10], and weaker in the high anticipation for future interaction condition,  $\beta = -.08$ , boot SE = .04, boot CI = [-.18; -.02]. The results indicated that people who believed the cause was highly controllable by Pat would be less likely to feel sympathy towards Pat, which in turn, less likely to train Pat. This indirect effect was stronger when people had no anticipation for future interaction than did people with anticipation. When *anger* was the mediator, the indirect effect of *personal controllability* was also stronger and significant in the no anticipation for future interaction condition,  $\beta = .07$ ,

boot SE = .04, boot CI = [ $<.01$ ; .17], but weaker and not significant in the high anticipation for future interaction condition,  $\beta = .01$ , boot SE = .03, boot CI = [ $-.04$ ; .09] (See Figure 3 for the model). The results indicated that, for people with no anticipation for future interaction, when they believed the cause was highly controllable by Pat, such attribution would make them feel angry, and they would be more likely to train Pat. However, the anger mechanism was not significant for people who had anticipation for future interaction.

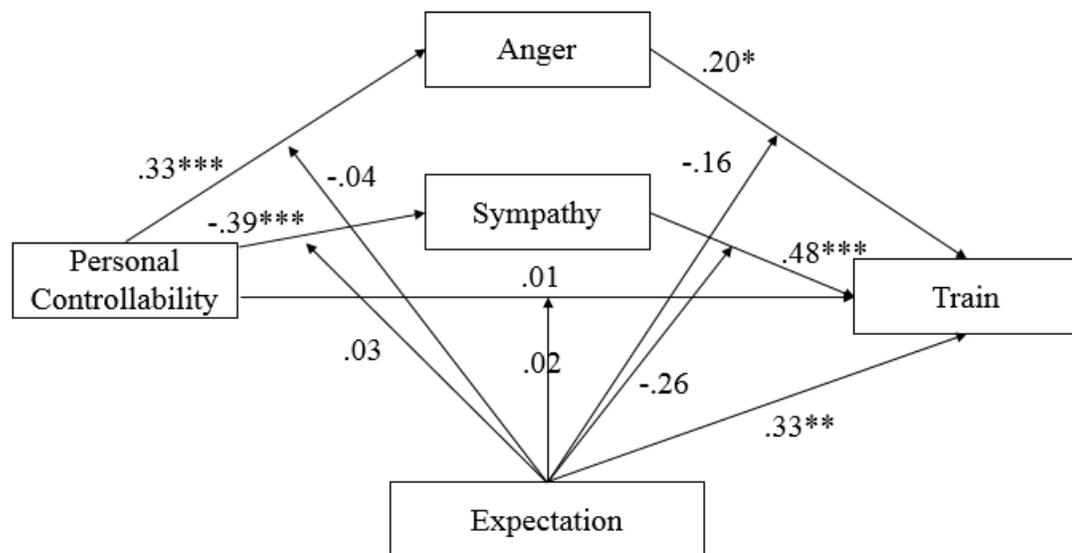


Figure 3 Moderated Mediation Model 2

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

For *anticipation for interaction frequency*, the conditional indirect effects of locus on people's intention to train the low-contributor, through sympathy, was stronger and significant in the low interaction frequency condition,  $\beta = -.13$ , boot SE = .06, boot CI = [ $-.27$ ;  $-.04$ ], and weaker in the high interaction frequency condition,  $\beta = -.06$ , boot SE = .04, boot CI = [ $-.17$ ;  $-.01$ ] (See Figure 4 for the model). The

results indicated that people who made situational attribution would be more likely to compensate Pat. This effect occurred when they felt sympathy toward Pat and this indirect effect was stronger when people had anticipation for lower interaction frequency than did people with anticipation for higher interaction frequency.

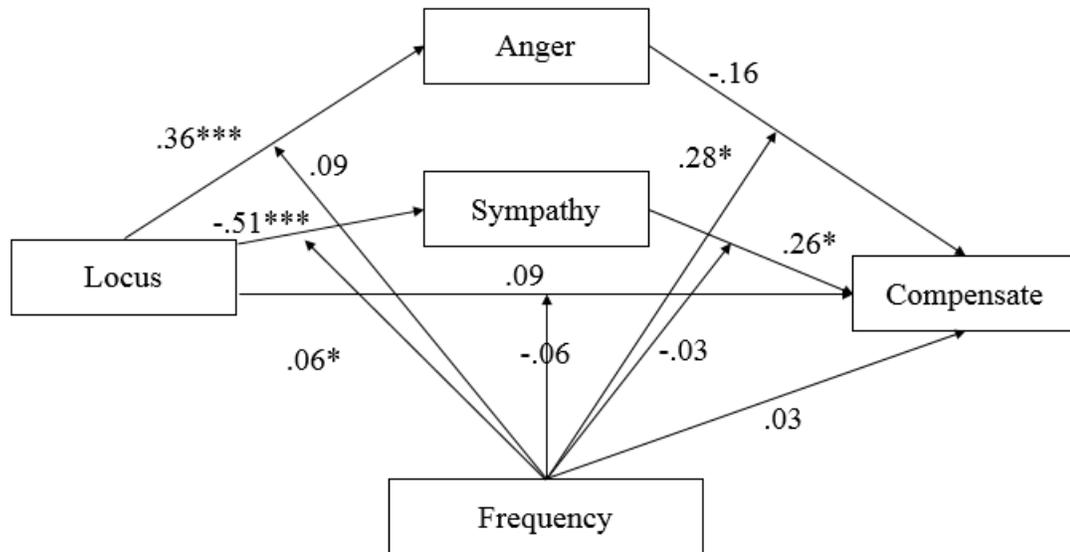


Figure 4 Moderated Mediation Model 3

Note. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

In general, the results of the moderated mediation analyses provided preliminary evidence for the moderating effect of *anticipation for future interaction* and *interaction frequency* on the relationship between attribution and behavioral responses mediated through affective responses.

## Discussion

The ANOVA results showed that *anticipation for future interaction* had a positive impact on the likelihood to *train* (H3e). However, this study didn't find evidence for the effect of *anticipation for future interaction* on *locus* (H1, H2),

*controllability* (H3a), *anger* (H3b), *sympathy*(H3c), *motivation* or *reject* (H3d).

Additionally, the results of the moderated mediation analysis indicated that the indirect effect of *locus* and *personal controllability* on *train* through *sympathy* was significantly stronger in no anticipation for future interaction condition than in anticipation condition. Overall, the findings of the first study showed that *anticipation for future interaction* had a positive impact on the likelihood to *train* as well as a stronger impact on the indirect effect of *locus* and *personal controllability* on *train* via *sympathy*. The results suggested that the participants in the no anticipation condition were less likely to *train* than were the participants in the anticipation condition. However, when the participants in the no anticipation condition made situational attributions (lower score in *locus* indicate situational attribution) or attributed the cause to something that was personally controllable, they were more likely to feel sympathy toward *Pat* and therefore more likely to train than were the participants in the anticipation condition.

By challenging LePine and van Dyne's (2001) model which assumed observers and actors had interdependent and ongoing relationships, this study found that teammates' behavioral responses changed when the prospect of future relationship changed. Also, the impact of *locus* attributions on behavioral response such as *train* through sympathy would change with the prospect of future relationship. This study also contributed to the prior literature that tested the effect of *anticipation for future interaction* on attributions, given that the potential effect of the anticipation on the whole attribution process was never examined (e.g., Berscheid et al., 1976; Harvey et al., 1980). Past research only found that high anticipation would make people make

more dispositional attributions (Berscheid et al., 1976; Monson et al., 1982; Shaver, 1975), which this study didn't find any supporting evidence, but this study found that the impact of *locus* on *compensate* through *sympathy* was stronger when people had no anticipation for future interaction than when they had anticipation.

Regarding the effect of anticipation for interaction frequency, the results showed that there was no significant difference in attributions (H4), controllability (H5a), anger and sympathy (H5b, H5c), motivate/reject (H5d), or compensate/train (H5e) between low and high frequency groups. However, the results of the moderated mediation analysis indicated that the indirect effect of *locus* on *compensate* through *sympathy* was significantly stronger in anticipation for low interaction frequency condition than in high frequency condition. When the participants in the low frequency condition made situational attributions (lower score in *locus* indicate situational attribution), they were more likely to feel sympathy toward *Pat* and therefore more likely to compensate than were the participants in the high frequency condition. In brief, the results suggested that *anticipation for interaction frequency* had no impact on individual part of the attribution process but had moderating effect on the link between locus, sympathy, and compensate.

This set of hypotheses were developed based on the findings that the level of familiarity between observers and actors decreases the likelihood of observers committing actor-observer bias (tend to make dispositional attributions of the cause of actor's behaviors) (Fiedler et al., 1995; Prager & Cutler, 1990) as well as the idea that meetings with high interaction frequency may seem more important to people than meetings with low interaction frequency do and therefore may make people more

motivated to collect information to make attributions. While it was assumed that teammates' ability and motivation to collect information would be influenced by the interaction frequency, this study nevertheless could only test the impact of *anticipation* for interaction frequency at low versus high level in vignette methodology. Given that there was no real interaction for people to collect more information and there was no real-life impact for people to be motivated to collect information, I could only suspect that the impact observed through vignette methodology was not strong enough.

### **Limitations**

It is hard to manipulate interaction frequency with high external validity when using either vignette methodology or lab experiments. However, it is possible to test the effect of *anticipation for future interaction* again in lab experiment where participants could have real interactions. Considering that most of the hypotheses regarding the effect of *anticipation for future interaction* did not find support in this study, I planned to test the effect of *anticipation for future interaction* again in the second study.

Another limitation of this study was that I couldn't directly measure participants' motivation and ability to seek out information, although it was the assumed mechanism behind the hypothesized effect of *anticipation for future interaction*. I therefore planned to examine participants' uncertainty toward the low-contributing individual through an indirect measure, *attributional confidence*, in the second study.

## CHAPTER 4

### STUDY 2

#### **Methods**

##### **Research design.**

The second study was designed to examine the effects of anticipation for future interaction (H1 through H3) and explanations given by the low-contributing individual on attribution process and behavioral responses of the perceiver (H6 through H8). A group interaction lab experiment with a 2 (high/low anticipation for future interaction)  $\times$  4 (low-contributing teammate's explanation: uncontrollable cause/controllable cause/controllable cause with a justification/none) between-subjects factorial design was conducted. Given that one-hour experiment had very limited time to create different combinations of the interaction frequency, it is hard to manipulate interaction frequency with high external validity in lab groups. Thus, I did not intend in the second study to test the H4 and H5 regarding the effect of interaction frequency. See Appendix D for the IRB approval for this study.

##### **Participants.**

Two hundred and eighty participants (140 groups) were recruited from classes in communication, information science, computer science, genetic breeding, and engineering at a northeastern university in the U.S. in exchange for either course credit or 10 US dollars. Eighteen groups (five groups had suspicion about the confederate, ten groups were removed due to the inconsistent acting of the confederates, three

groups failed to submit the online survey responses) were removed from the sample, so the final dataset consisted of 122 groups. Participants were randomly assigned to three-person groups in which one member was an experimental confederate who acted as a low-contributing member and followed a script that manipulated the variable of explanation given by the low-contributor. Thus, each group contained two naïve participants plus a confederate. I made no attempt to balance gender composition across groups and experimental conditions. There were 148 groups in the final sample.

### **Tasks.**

The School of Business Policy Task developed by Wheeler and Mennecke (1992) was adapted for the current study. This is a hidden-profile task in which there were five roles and participants have to share their unique information given to their specific roles in order to find the best answer. I rearranged the information such that the information was evenly distributed among the three roles. Experimenters always randomly assigned the first two roles in the task packet to the naïve participants and kept the last role for the confederate. Doing so would keep the information given from the confederate in each group consistent. Experimenters were instructed to distribute each of the role randomly when in fact confederate always received the last role so that the naïve participants wouldn't notice that a confederate was planted and received a pre-arranged role. This task presented information about a university undergoing several problems related to budgets, teaching quality, enrollment issues, and so forth. The groups were asked to identify the main problem facing the university and to

provide solutions for the problem. The participants were told that they had 40 minutes to work on the task.

### **Manipulations of Independent variables.**

*Anticipation for future interaction.* Participants in the anticipation for future interaction were told that there would be two phases of the study, during which they would be working with the same team members. Participants in the no anticipation for future interaction condition were simply not told anything. Below is the exact wording the experimenter used to tell participants in the anticipation for future interaction condition:

There are two-phases of this study. This is the first phase. The second phase will be scheduled at another time. Once you finish the first phase, you will be working on another task with the same team members for the second phase.

*Explanations.* Explanations given by a low-contributing individual to their teammates in this study refers to the statement that explains why one's contribution to the group goal is less than that of other team members. Given that controllability has been identified as the primary causal dimension influencing one's willingness to help, I designed three explanations that varied according to degree of controllability: (a) an uncontrollable cause, (b) a controllable cause, and (c) a controllable cause that appealed to a higher moral goal (i.e., justification). The fourth condition of this variable was a no-explanation control. The comparison between an uncontrollable cause and a controllable cause was commonly seen in the literature (Weiner, 1995). However, the assumed mitigating effect of justification for the negative impact a

controllable cause may bring is less seen. I therefore include condition (c) a controllable cause while appealing to a higher moral goal to compare with condition (b).

These explanations were part of scripts followed by the confederates. To develop these scripts, I consulted previous research, and adapted two versions for pilot testing. First, I tested these two versions on six lab undergraduate research assistants and asked for their suggestions to see if there was better alternative for each condition. Then, I revised wording of the scripts based on the assistants' feedback and I tested on 54 participants, drawn from the same population as the participants in the main experiment. Participants were asked to rate the believability and appropriateness of the scripts on a 7-point scales, with anchors of 1 = "*strongly disagree*" and 7 = "*strongly agree*." The scripts receiving the highest ratings were used in the study. The ratings received by the highest versions for each of the condition were reported herein: uncontrollability (believability: 3.85; appropriateness: 4.23), controllability (believability: 5.22; appropriateness: 3.52), justifications (believability: 3.13; appropriateness: 2.88).

The script used for the uncontrollable cause contained the lines, "*I haven't been feeling well. I'm having a really bad migraine today*," adapted from Weiner (1995). This explanation by definition should convey one's intention to accept the cause of the low-contribution behaviors was from the self (as opposed to situational factors) but it was not controllable. The script for the controllable cause contained the lines, "*I was up late last night working on a paper. I got very little sleep last night*,"

taken from Schlenker, Pontari, Christopher, Carver, and Smith (2001, p.18). This explanation is offered to diminish personal control. Finally, the script for the controllable cause with a higher moral goal contained the lines, *“I thought it was more important to listen. It sounded like the information you guys has is more relevant,”* adapted from examples in Tata (2002). Lastly, a control condition of no explanation provided was included. The confederates’ entire scripts are presented in Appendix E.

### **Confederate training.**

Six students from the same population were recruited to play the role as the confederates. There were between age 18 and 22. One was freshman, four were junior, and one was senior. Two majored in Communication, two majored in Industrial and Labor Relations, and two were in the department of Human Development. I assigned confederates to scheduled time slots based on their availabilities.

Low-contribution refers to the work done to achieve the group goal by an individual is lower than what is expected by his/her teammates. Past research in causal attributions of poor performance examined whether people attributed the cause of low-performance to low ability or low motivation (Weiner, 1980a, 1980b). I, on the other hand, held the ability constant and only looked at how behaviors that suggest low effort and low motivation influence teammates’ responses. Following the motivation manipulations of Jackson and LePine (2003), confederates employed in my study were trained to demonstrate that they “did not work very hard to help the group complete its activities and achieve its goals (p.465).”

In order to create more specific scripts for confederates, I adopted the motivation manipulation of Taggar and Neubert (2004) such that confederates were given the characteristics of people with low conscientiousness. The behavioral markers of low conscientiousness were borrowed from the ten-item list developed by Goldberg (1992) and I excluded the items that wouldn't be seen in public such as "leave a mess in my room" and "leave my belongings around". The exact behavioral markers confederates followed include "shirk your duties, neglect your duties, waste your time, do things in a half-way manner, find it difficult to get down to work." To provide confederates with more specific rules to follow, I developed a list of rules using the behavioral markers of Goldberg (1992) and the sample actor behaviors in Taggar and Neubert (2004). The rules are listed as below.

1. During this group meeting, please act in a way that does not contribute to the group task. Please don't try to act lazy, or sloppy, or not conscientious. Please simply not to contribute.
2. After receiving the information packet for the whole group, don't initiate any conversation. Take your time reading the materials, but stop reading when it looks like everyone else is done. Be careful not to appear that you don't understand.
3. Ask questions only to clarify what the group is asked to do.
4. When you are assigned a certain task, try to shirk your duties. You can say, "I'm not sure what I should do."
5. When everybody starts to do their assigned task, you neglect your duties. Ask questions to clarify what you were assigned to do. Be careful not to appear that you don't understand.
6. Never propose new idea or solve a problem faster than any of your group members.
7. If you are asked to provide your opinion about what was just said by participants, you can think for a few seconds and say, "Yes, it makes sense."; "I agree with what everyone else has said."; "I don't have anything new to add."; "I'm just listening. I'll add something if I have anything to add."
8. If you are asked to provide your opinion with no prior discussions or when you asked to take a side, you can think for a few seconds and say, "I need more

time.”; “I need to think about it some more.”; “I’m not sure; I need to think about it more.”

9. Do not work hard to help the group complete its activities and achieve its goals.
10. Do not volunteer to record a solution for the group. If you are assigned to do, reluctantly agree to record a solution by saying, “Oh, ok.”
11. After you drop the must-say line, if you are asked to provide opinion. You can say, “I’m not sure.” “Well, I think you’ve covered it.” “You guys have done a good job!” “You guys have made good points already!”

All of the confederates went through a one-hour training session and at least one pilot-test experiment. Eleven pilot-test experiments were conducted in total. Confederates were instructed to deliver the relevant lines after the experimenter informed the groups that 5 minutes were remaining for them to complete the task (see experimental sessions details below).

### **Experimental sessions.**

Before participants were invited to the lab, they were asked to complete an online informed consent form, followed by an online questionnaire containing individual difference measures (See Appendix F) used as control variables. After they gave consent and finished the online questionnaire, the naive participants were invited to the lab in groups of two based on their schedule availability. Groups were then randomly assigned to one of the eight conditions based on anticipation or none of future interaction and the explanation for low contribution given by the confederate. When participants arrived at the lab they were seated around a small table, and the experimenter then placed a member number in front of each one. Confederates were instructed to be neither the first nor the last participant to arrive for the study, in order

to avoid the appearance of working with the experimenters. The confederate was always labeled as “Member 1”.

During the overall instructions for the experiment, participants in the high *anticipation for future interaction* condition were led to believe that they would be working on another task with the same team members for the second phase of the study. Groups in all conditions were told they would have 40 minutes to work on the School of Business Policy Task. Once the groups began the task, the experimenter left the room. In all conditions confederates acted like they were not interested in the group task and contributed less than did the real experimental participants, as described earlier. After groups had worked for 20 minutes the experimenter returned to interrupt the session to ask the participants to complete measures assessing their degree of uncertainty about each of their teammates (See below for description of the measure). This measurement at mid-point was designed to examine any change in uncertainty after the confederate provided an explanation for their low-contributing behaviors. The experimenter returned again to the room to let groups know when 5 minutes were remaining. At that point the confederates in the three conditions with an explanation delivered the crucial lines of their script.

After the group task, participants were asked to complete a post-task questionnaire online using their laptops or smart phones in which they were first presented some general questions about each teammate and followed by more specific questions about “Member #1”. To reduce participants’ suspicion over all the questions being about the confederate, they were told that we were interested in how similar the

dyadic perceptions between teammates were, and we were going to ask each of them to rate just one other member. Participants were led to believe that one of the other members was rating them while they were randomly selected to rate “Member #1” by the following instruction: “While Member #1 is rating Member #3 (or #2 depending on what number participant received) and Member #3 (or #2) is rating you, please evaluate the person sitting at spot #1.” After they finished the post-task questionnaire, they were partially debriefed about the general purpose of this study (i.e., how different levels of effort in teamwork will influence the group interaction process and performance) and given the agreed compensation. Few participants had suspicion about whether there was a confederate planted in the group. Experimenters were trained to say no and tell the participants that they would be fully debriefed after the data collection was completed. I then excluded the data of the group where participants had suspicion, reviewed the situation with the confederate of the group, and re-ran the condition of the group. After I completed the data collection, participants were fully debriefed through email about the placement of a confederate in their groups and the manipulation of *anticipation for future interaction*. The complete experimenter’s script is included as Appendix G.

All group discussions were audio- and video-recorded. The recordings were used as additional manipulation check of the condition that the confederates were asked to execute as well as potential analysis of participants’ behavioral responses toward the confederate for future research plans.

## Measures.

*Control variables.* The pre-task questionnaire included demographic questions (gender, class year, age, ethnicity), the *Big Five* scale (Goldberg, 1992), and the *Need for Closure* scale (Kruglanski, Webster, & Klem, 1993), which were used as control variables in this study. Jackson and LePine (2003) found that extraversion had a positive relationship with training and motivating; agreeableness had a positive relationship with compensating and a negative relationship with motivating and rejecting. I therefore included the *Big Five* as one of the control variables. Goldberg's (1992) 10-item scale for each of the Big Five was used. Participants were asked to rate how accurately each statement described them on a 5-point scale, with anchors of 1 = “*very inaccurate*” and 5 = “*very accurate*.” *Need for closure* was included to measure participant’s tolerance for uncertainty for it can be a potential moderator when participants experienced uncertainty about the confederate. Kruglanski et al's (1993) 42-item *Need for Closure* scale was used. Participants were asked to rate how much they agree with the statements on a 6-point scale, with anchors of 1 = “*strongly disagree*” and 6 = “*strongly agree*.” See Appendix F for all the items used in the pre-task questionnaire.

The post-task questionnaire included manipulation check questions (*anticipation for future interaction, perceived loafing, explanations*), questions about each teammate (*pre-task interaction*) and questions about the low-contributing confederate, including *attributions, uncertainty, affective responses, and behavioral responses*, among which the manipulation check questions of *anticipation for future*

*interaction* ( $\alpha = .62$ ) and *perceived loafing* ( $\alpha = .86$ ), *attributions* (i.e., locus,  $\alpha = .56$ , personal controllability,  $\alpha = .80$ , external controllability,  $\alpha = .77$ , and stability,  $\alpha = .66$ ; McAuley, Duncan, & Russel, 1992), and *affective responses* (i.e., anger,  $\alpha = .90$ , and sympathy,  $\alpha = .63$ ; Struthers, Weiner, & Allred, 1998) were measured in the same way as depicted in study 1. Below I describe how the additional questions used in study 2 were measured.

***Manipulation check questions.*** To examine the effectiveness of the manipulation of explanations, the items of *personal controllability* from the scale of attributions were used to examine to what extent participants believed the cause was controllable by the confederate as well.

***Pre-task interaction.*** To control the influence of any pre-task interaction on participant's evaluations of their teammates, I developed the following two questions to capture it. First, I asked participants if they knew any of their team members before the experiment with the choices of *yes* and *no*. If *yes* was selected, then participants were presented with a second questions that asked them how well they knew the team member before the experiment on a 5-point scale, with anchors of 1 = "*not much*" and 5 = "very well."

***Uncertainty.*** Following how Clatterbuck (1979) operationalized uncertainty, I used the measure of *attributional confidence* (Clatterbuck, 1979) ( $\alpha = .86$ ) to capture the change of participants' uncertainty during the group interaction process and after the confederate provided an explanation for the low-contributing behavior.

Attributional confidence is defined as “the degree to which people are able to understand and predict how others will behave” (Gelfand, Kuhn, & Radhakrishnan, 1996, p.58). Participants were asked to rate their attributional confidence toward each of their teammates at the mid-point and then again in the post-task questionnaire, but only toward the confederate. Participants were asked to answer each question using a scale from zero to one hundred. The questions include, (a) “How confident are you of your general ability to predict how Member #?”; (b) “How certain are you that Member # likes you?”; (c) “How accurate do you think you would be in predicting the values he/she holds?”; (d) “How accurate do you think you would be in predicting Member #'s attitudes?”; (e) “How well do you think you could predict Member #'s feelings and emotions?”; (f) “How much can you empathize with (share) the way Member # feels about himself/herself?”; and (g) “How well do you know Member #?”

***Behavioral response.*** I measured participants' behavioral responses toward the low-contributing individual using the same set of questions used in Study 1. Participants were asked to indicate to what extent they engaged in each of the responses on a 5-point scale, with anchors of 1 = “*never*” and 5 = “*very often.*” Three questions were removed from the original sixteen items and the wordings of the questions were also adjusted for the context of this study. *Compensate* ( $\alpha = .91$ ) was assessed by four items: (a) “Took on some of Member #1's part of the task as your own”; (b) “Pitched in and do some of Member #1's part of the task”; (c) “Did what you could to get Member #1's part of the task done”; and (d) “Completed parts of the task if Member #1 didn't finish his/her part.” Four items were used to measure *train* ( $\alpha$

= .81): (a) “Showed Member #1 a more efficient way to complete the task”; (b) “Showed Member #1 how to prioritize the steps in the task”; and (c) “Suggested Member #1 the best way to complete the work.” *Motivate* ( $\alpha = .82$ ) was assessed by four items: (a) “Told Member #1 that poor performance would not be tolerated if he/she was responsible for your team’s potential poor team performance”; (b) “Pointed out the consequences of potential poor team performance to Member #1”; and (c) “Asked Member #1 to work harder if he/she didn’t work hard enough”. Four items were used to assess *reject* ( $\alpha = .72$ ): (a) “Acted as though Member #1 was no longer a member of the group”; (b) “Ignored comments and suggestions made by Member #1”; and (c) “Avoided interactions with Member #1.”

## **Results**

The results of the second study provided opportunities to test H1 through H3 regarding the effect of anticipation for future interaction and H6 through H8 regarding the effect of explanations. In this chapter, I first report the data analyses for H1 through H3 and then present the results for H6 through H8.

### **Manipulation check.**

There were 244 valid cases in the dataset of the second study. Participants in the no anticipation for future interaction condition were expected to have lower expectation to see their group members in the future than participants in the high anticipation for future interaction condition. A one-way ANOVA was performed with treatment condition as the independent variable and a composite variable which consisted of the three manipulation check questions for *anticipation for future*

*interaction* as the dependent variable. The results showed that there was a significant difference between the two conditions; however, the pattern of the mean difference was opposite to the intended treatment effect,  $M_{\text{no}} = 2.94$ ,  $M_{\text{high}} = 2.60$ ,  $F(1, 242) = 9.83$ ,  $p < .01$ ,  $w^2 = .03$ . Given that the mean differences indicated that participants in no-anticipation condition had significantly higher anticipation for future interaction than did the participants in high-anticipation condition, the manipulation seemed to cause the boomerang effect. Boomerang effect occurs when the persuasive attempt makes message receivers adopt an opposite position (Byrne & Hart, 2009). The manipulation of anticipation for future interaction caused participants to have lower anticipation for future interaction than participants who did not receive the manipulation. Given that the manipulation caused participants to adopt the opposite direction of the manipulation attempt, I suspect the manipulation caused the boomerang effect and therefore failed. The implications of this manipulation check failure will be discussed in the Discussion section and in the final Discussion chapter.

The three explanation conditions were designed such that they varied according to the degree of controllability: (a) an uncontrollable cause, (b) a controllable cause, and (c) a controllable cause that appealed to a higher moral goal (i.e., justification). I conducted a one-way ANOVA to check whether the participants in condition (a) had the lowest rating in terms of personal controllability, followed by participants in condition (c). I didn't expect to see any difference between the no-explanation control condition and condition (b). The results showed that there was a significant difference between the four conditions in personal controllability,  $M_{\text{uncontrollable}} = -.36$ ,  $M_{\text{justifications}} = .01$ ,  $M_{\text{controllable}} = .07$ ,  $M_{\text{no-explanation}} = .32$ ,  $F(3, 238) =$

5.03,  $p < .01$ ,  $w^2 = .05$ . As predicted, the results of post hoc tests showed that condition (a) had significantly lower score in personal controllability than condition (c) as well as the other two conditions. There was no significant difference between the control condition and condition (c).

I also checked whether participants' perceptions that the confederate was loafing did not differ across conditions. As expected, there were no significant differences between the conditions of *anticipation for future interaction*,  $M_{\text{no future}} = -.03$ ,  $M_{\text{high future}} = .03$ ,  $F(1, 239) = .26$ ,  $p = .61$ ,  $w^2 = -.00$  or between the conditions of *explanations*,  $M_{\text{control}} = -.13$ ,  $M_{\text{uncontrollable}} = .12$ ,  $M_{\text{justification}} = -.17$ ,  $M_{\text{controllable}} = .17$ ,  $F(3, 237) = 1.81$ ,  $p = .15$ ,  $w^2 = .01$ .

#### **Data analysis strategy.**

H1 through H3 were developed to examine if *anticipation for future interaction* had any impact on attribution (*locus, personal controllability*), affective response (*anger, sympathy*), and behavioral responses (*train, compensate, motivate, reject*). Before testing the hypotheses, I used correlation analysis to help me understand the relationship between variables. To test the hypotheses, I planned to use one-way ANOVA to compare group means. Additionally, I tested the moderated mediation effect of *anticipation for future interaction* on the attribution model using Hayes' (2013) PROCESS macro for SPSS. Hayes' (2013) PROCESS macro, a regression based analysis, could be used to test the moderated mediation effect with bootstrapping technique, which would generate the information of confidence interval (CI) to estimate if the effect is statistically significant.

H6 concerned the effect of explanation on affective responses. H7 was about the effect of explanations on attributional confidence and H8 was to examine whether explanations would provide greater attributional confidence for people with high anticipation for future interaction than for people with low anticipation. Given that the explanation was given by the confederate in the last five minutes before the task ended, explanation wouldn't have any influence on teammates' behaviors toward the low-contributing confederate. I therefore didn't intend to test the chain effect of explanations on attributions, then affective responses, and finally on behavioral responses in moderated mediation analysis. I planned to conduct a one-way ANOVA to test the effect of explanations on affective responses and mixed model ANOVAs to test the effect of explanations on attributional confidence.

#### **Preliminary data analysis.**

All the items of each scales were averaged and standardized based on the results of exploratory factor analysis (EFA) and reliability tests. The results of the reliability analyses and the list of the items for each of the ten composite variables, including *anger*, *sympathy*, *locus*, *external controllability*, *personal controllability*, *stability*, *train*, *compensate*, *motivate*, and *reject*, were reported in Appendix H. The Pearson correlations among the key variables are reported in Table 2.

Table 2  
*Pearson Correlations for Standardized Key Variables*

Measure	1	2	3	4	5	6	7	8	9	10
1. Anger	–									
2. Sympathy	.00	–								
3. Locus	.03	-.16*	–							
4. EControl	.04	.06	-.16*	–						
5. PControl	-.14*	-.21**	.36***	.04	–					
6. Stability	-.09	-.20**	.33***	.27***	.06	–				
7. Train	.17**	.13*	-.12	.15*	-.10	.05	–			
8. Compensate	.37***	.07	.04	.01	-.06	-.10	.41***	–		
9. Motivate	.16*	-.01	-.08	.11	-.11	.17**	.38***	.13	–	
10. Reject	.37***	-.03	-.04	.06	-.17*	.10	.32***	.26***	.51***	–

Note. EControl = external controllability; PControl = personal controllability.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Correlation analysis results showed that the largest correlation effect was between *motivate* and *reject*,  $r = .51, p < .01$ . Participants who intended to motivate the low-contributor in their teams were also more likely to reject the person. This result fitted the theoretical expectations that people who had anger toward the low-contributing individual should be more likely to motivate or reject the individual, depending on the stability attributions. Additionally, consistent with the relationship hypothesized in the model, *anger* had a positive relationship with *reject*,  $r = .37, p < .01$ ; *locus* had a positive relationship with *personal controllability*,  $r = .36, p < .01$ . Whereas the model predicted that people who felt angry toward the low-contributor should be less likely to compensate the low-contributor's work, the correlation result suggested the opposite, the relationship between *anger* and *compensate* was positive:  $r = .37, p < .01$ .

### **Hypothesis testing of H1 through H3e.**

To test H1 through H3e, I conducted a one-way ANOVA with *anticipation for future interaction* (no vs. high) as independent variable on each of the ten composite variables. Bonferroni correction was applied to the multiple significance tests ( $\alpha = .05/10 = .01$ ) to control the overall Type I error rate. There was a significant main effect of *anticipation for future interaction* on the likelihood to attribute the cause of the low-contributor's behaviors to something that was dispositional,  $M_{\text{no}} = -.16$ ,  $M_{\text{high}} = .16$ ,  $F(1, 242) = 6.52$ ,  $p = .01$ ,  $w^2 = .02$ , indicating that people with anticipation were more likely to make dispositional attribution than were people with no anticipation. The results provided supporting evidence for H1 and evidence to reject H2. Regarding H3a through H3e, the results showed that there was no significant difference between the two groups in terms of controllability (H3a), anger (H3b), sympathy (H3c), motivate/reject (H3d), or compensate/train (H3e). The overall results are reported in in Appendix I.

### **Post hoc exploratory data analyses of the moderated effect of anticipation for future interaction.**

The hypothesized model was that the effects of attribution (*locus, personal controllability, external controllability, and stability*) on people's behavioral responses (*train, compensate, motivate, and reject*) were mediated by their affective responses (*anger, sympathy*) and the mediation effects were moderated by people's *anticipation for future interaction* with the low-contributor in their teams. The model that I chose to test the moderated mediation effect assumed that the moderator had effects on each of the paths in the mediation relationship. I chose this model because no prior research

had studied the effect of this moderator before and this model could demonstrate which part of the model differed depending on the levels of the moderator. Given that it allowed multiple mediators and moderators, I entered both *anger* and *sympathy* at the same time along with the moderator in every model that I tested. The four attribution variables (treated as independent variables) and the four behavioral variables (treated as dependent variables), on the other hand, were entered one at a time. I found no supporting evidence for any of the moderated mediation models that I tested. This indicated that *anticipation for future interaction* had no moderating effect on the relationship between attribution to behavioral responses through affective responses.

### **Hypothesis testing of H6a through H8.**

H6 hypothesized that explanations which attributed the cause to something that was uncontrollable would solicit the most sympathy and the least anger, followed by justifications, and then the explanations which attributed the cause to something that was controllable. I conducted two one-way ANOVAs on the dependent variables *anger* and *sympathy* with *explanations* (no explanation, uncontrollable, justifications, controllable) as the independent variable. Bonferroni correction was applied to the multiple significance tests ( $\alpha = .05/2 = .03$ ) to control the overall Type I error rate. Partially supporting H6a, there was a significant main effect of *explanations* on *sympathy*,  $F(3, 240) = 4.18, p = .01, w^2 = .04$ , but not on *anger*,  $F(3, 240) = 0.27, p = .85, w^2 = -.01$ . Planned contrasts showed that explanation which attributed the cause to something that was uncontrollable indeed solicited more *sympathy* than did justification,  $t(240) = 2.91, p < .01, r = .18$ . Contrary to what was expected,

justifications solicited less *sympathy* than did the explanations that attributed the cause to something that was controllable,  $t(240) = -2.09, p = .04, r = .13$ . See Table 3 for the means and standard deviations.

Table 3

*Mean and SD on Sympathy and Anger as a Function of Explanations*

	Sympathy		Anger	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
No explanation	-.21	.87	.18	.97
Uncontrollable	.28	1.05	.82	1.05
Justifications	-.23	.98	-.07	1.00
Controllable	.14	1.01	-.03	1.00

H7 hypothesized that participants who received an explanation from the low-contributor would have higher attributional confidence than participants who did not receive any explanation. Recall that attributional confidence was measured at two points during the experimental session, at the halfway point and again after task completion, with a seven-item scale. Principle component analyses confirmed that the items formed a reliable scale (Mid-point: Cronbach's  $\alpha = .86$ ; post-task: Cronbach's  $\alpha = .86$ ). I therefore created two variables by averaging over the seven items measured at mid-point and after task completion. A  $2 \times 2$  mixed model ANOVA with one within-subjects factor, attributional confidence (mid-point vs. post-task), and one between-subjects factor, explanation (no vs. yes) was conducted to examine the effect of explanations on attributional confidence measured at mid-point and at the end. The means and standard deviations for explanations are reported in Table 4.

Table 4

*Mean and SD on Attributional confidence as a Function of Explanations*

	No explanation		Explanation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mid-Point Attributional confidence	46.93	21.63	43.98	18.58
Post-Task Attributional confidence	43.88	20.00	46.39	17.45

The results showed that there was a significant interaction effect of *explanations* and *attributional confidence*,  $F(1, 191) = 4.66, p = .03, w^2 = .02$ . The effect indicated that the change of attributional confidence differed in explanation condition and no explanation condition. The interaction plot (Figure 5) showed that the participants in the no explanation condition had higher attributional confidence at mid-point toward the low-contributing individual in teams than did the participants in the explanation condition. However, the participants in the explanation condition eventually had greater attributional confidence than the participants who never received any explanation. H7 was supported.

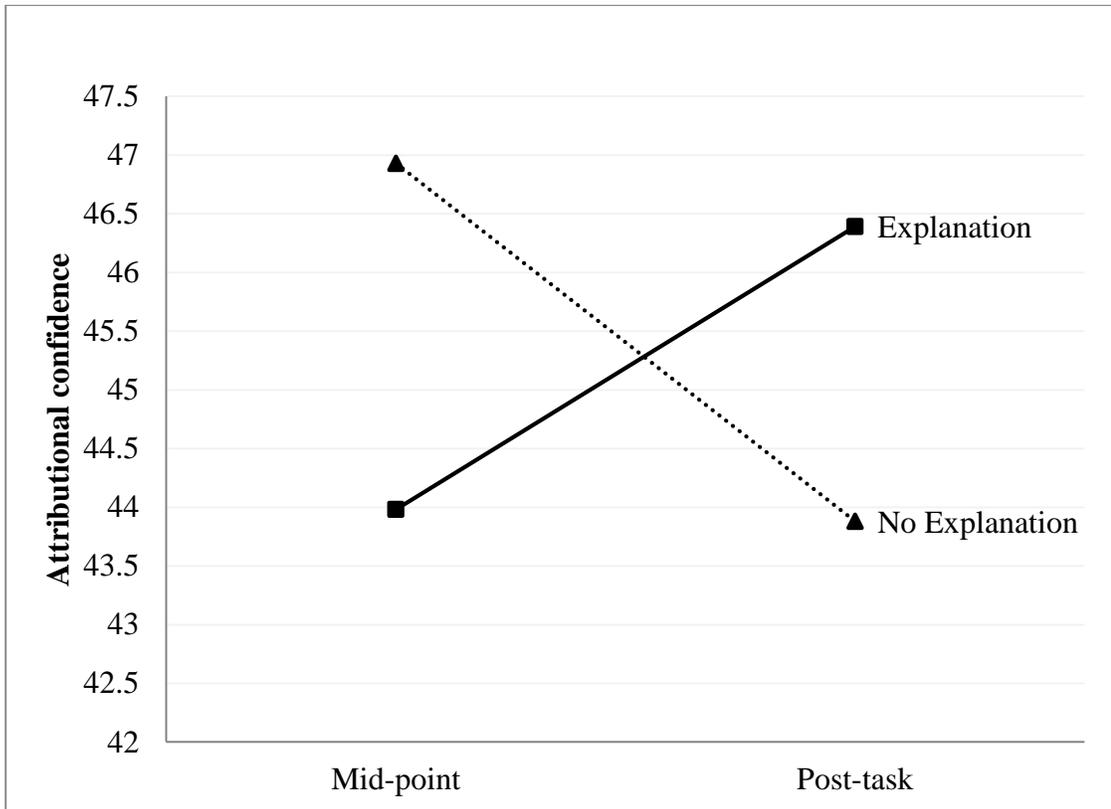


Figure 5 Plot of interaction of Explanation  $\times$  Timing on Attributional confidence

H8 hypothesized that low-contributor's explanation would provide greater *attributional confidence* for people with high *anticipation for future interaction* than people with no *anticipation for future interaction*. A  $2 \times 2 \times 4$  mixed model ANOVA with one within-subjects factor, attributional confidence (mid-point vs. post-task), one between-subjects factor, anticipation (no vs. yes), and one between-subjects factor, explanation (4 conditions), was conducted to examine the effect of anticipation for future interaction and explanations on attributional confidence measured at mid-point and at the end. The means and standard deviations are reported in Table 5.

Table 5

*Mean and SD on Attributional confidence as a Function of Four Explanations*

	No Anticipation		Anticipation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Mid-Point Attributional confidence				
No explanation	45.39	4.49	48.40	4.37
Uncontrollable	44.80	3.66	42.68	3.60
Justifications	49.31	3.66	38.97	3.81
Controllable	49.24	3.66	37.34	4.06
Post-Task Attributional confidence				
No explanation	42.33	4.25	45.35	4.13
Uncontrollable	46.79	3.47	43.54	3.41
Justifications	50.92	3.47	43.03	3.06
Controllable	49.49	3.47	43.94	3.84

There was no main effect of *anticipation for future interaction* in the change of attributional confidence across time points,  $F(1, 185) = 3.05, p = .08, w^2 < .01$ . The pattern of the mean difference at mid-point ( $M_{\text{no anticipation}} = 47.19, M_{\text{anticipation}} = 41.85$ ) showed that the participants in anticipation condition reported lower attributional confidence than did the participants in no anticipation condition, indicating that they indeed experienced greater uncertainty before receiving explanation. However, there was no interaction between *anticipation for future interaction* and *explanation* in the change of attributional confidence across time points,  $F(3, 185) = 1.19, p = .31, w^2 < .01$ . Thus, H8 was not supported.

## Discussion

The ANOVA results showed that *anticipation for future interaction* had a positive impact on *locus* (high score indicated dispositional attribution), indicating that people who had high anticipation for future interaction were more likely to make dispositional attribution, thus supporting H1 and rejecting H2. Nevertheless, due to the manipulation failure of anticipation for future interaction, any interpretation of these results should be done with caution. *Anticipation for future interaction* did not have effect on controllability (H3a), *anger* (H3b), *sympathy* (H3c), *motivation or reject* (H3d), or *train or compensate* (H3e).

Regarding explanations, this study found partial support for the effect of explanations on sympathy (H6a) and no support for the effect on anger (H6b). More specifically, it was found that the explanations which attributed the cause to something that was *uncontrollable* solicited more sympathy than did *justifications*. However, *justifications* did not solicit more sympathy than did explanations which attributed the cause to something that was *controllable*. Consistent with Weiner's (1995) proposed strategy that shifting the controllable cause to uncontrollable factor would avoid the responsibility that others attributed to the self, whereas justifications was the next proposed strategy to offer a mitigating circumstances when one couldn't help but to admit that the cause was controllable and accepted the responsibility. However, the results were not in line with the relationship between justifications and explanations which attributed the cause to something that was controllable. One potential explanation for why controllable condition turned out to be better than the justifications condition might be that students could resonate more with the line of

controllable condition (i.e., I was up late last night working on a paper. I got very little sleep last night.) than with the line of justification condition (i.e., I thought it was more important to listen. It sounded like the information you guys has is more relevant.). If I had used the line that was more personal and that was more comparable to the controllable condition for justification condition, for example, similar to the line proposed in Weiner (1995), something such as “I was up late last night taking care of my sick roommate. I got very little sleep last night.” might have different results.

Whereas past research found that controllable causes solicited more anger and punitive responses than did uncontrollable ones (e.g., Juvonen & Weiner, 1993; Wood & Mitchell, 1981), this research did not find empirical evidence for the hypothesis that explanations which communicated uncontrollable cause would solicit less anger than the ones which communicated controllable cause or justifications (H6b). Based on the feedback given by the confederates from the questions that they were asked by the real participants, the line of the uncontrollable condition (i.e., I haven’t been feeling well. I’m having a really bad migraine today.) didn’t seem to be believable. A participant raised her suspicion about how truthful the confederate’s explanation was. The participant believed that migraine should prevent people from coming to school or participating an experiment at all. Also, the participant believed that, if the confederate was sincerely sorry for not being able to work at all, the confederate would have notified the other team members before they began the task rather than saying it at the end of the task. According to Hareli (2005), how believable and appropriate an account is decides its quality. Suppose there is a discrepancy between the account

given and facts known to the receiver, symptoms of migraine in this case, the receiver tends to reject the account.

Consistent with H7, the findings suggested that people would have greater attributional confidence after they received explanations from the low-contributor than people in the control groups. Whereas past attribution research tended to overlook the interactive aspect of attribution process (Wood & Mitchell, 1981), the current study contributed to the attribution literature by examining the change of attributional confidence before and after the low-contributor provided an explanation about their lack of contribution.

Regarding the hypothesis that explanation would provide greater attributional confidence for people with higher anticipation for future interaction than for people with lower anticipation, the empirical evidence was weak for the mean difference of attributional confidence was not significant (H8). There are two potential explanations for not being able to find the hypothesized effect: (a) The manipulation of anticipation for future interaction failed, so the uncertainty that the participants experienced didn't differ across groups; (b) Groups that finished early before the mid-point did not have responses at mid-point. Thus, the participants in these groups were not included in the comparison, which resulted in 30% of missing values in this set of questions. This might be the reason why the pattern of the mean difference was consistent with the hypothesis but it was not significant.

### **Limitations.**

Regarding the manipulation failure of *anticipation for future interaction*, there are two possible explanations. One is that the recruitment and experiment design

caused boomerang effect, as explained previously. Another possibility is that the effect of the manipulation waned after the one-hour group session. The second explanation is less plausible than the first one because the mean difference observed between no-anticipation condition and high-anticipation condition was significant. Suppose the manipulation failed to be captured by the delayed manipulation check questions, there should be no difference between these two conditions. However, the data showed that the participants in the high-anticipation condition, contrary to what was intended, had significantly lower anticipation for future interaction than did the participants in the no-anticipation condition.

Given that the manipulation of *anticipation for future interaction* failed in this research design, future research could consider using shorter tasks and scheduling participants' time for two sessions to make the manipulation of anticipation real. Doing so could also provide opportunities to test the effect of explanations given in the first session on teammates' behavioral response toward the low-contributing individual in the second session. The current study only tested the effect of explanations on teammates' affective responses because the questions about behavioral responses were based on their recall of the extent to which they engaged the described behaviors in the meeting that just ended rather than the likelihood of behavioral intentions in future meetings.

However, there are some trade-offs using a shorter task and telling participants the second session would be arranged right after the first session when in reality participants would be dismissed right after the first session. For example, the impact of

having a low-contributor on a shorter (easier) task would become less severe and therefore teammates' affective responses and behavioral responses might not be strong enough to be observed. Another potential problem is that scheduling participants' time for two sessions when in reality there was only one session may bring complaints if researchers couldn't afford paying the compensation for two sessions. There is, however, one potential solution to avoid the boomerang problem when manipulating the anticipation for future interaction. If researchers can afford paying participants for the time spent in two sessions, they can rearrange the participants in the no anticipation condition to work with people from different groups in the second session whereas the participants in the high anticipation condition will be asked to stay and work with the same teammates for the second session.

## CHAPTER 5

### DISCUSSIONS

This dissertation examined the prospect of future interaction and interaction frequency on teammates' motivation and ability to make attributions of the underlying cause of low-contributing teammates' behavior as well as the possibility to negate the attributions that teammates made through explanations provided by the low-contributor. The predicted effects of anticipation for future interaction and interaction frequency on teammates' attributions, affective response, and behavioral responses were tested in two empirical studies which provided some support to the idea that the prospect of future relationship would influence teammates' behavioral response toward the low-contributors in teams as well as the mechanism between attributions and behaviors. The explanations provided by the low-contributor were also found to increase attributional confidence of teammates.

#### **Summary of the Findings**

The findings of the two studies are summarized in Table 6. The key finding of this dissertation was that LePine and van Dyne's (2001) model changed as the prospect of future relationship differs. Regarding the predictions on which the traditional perspective of attribution and dual-process models diverged (H1 vs. H2), the findings of the two studies were inconclusive. However, people with no anticipation for future interaction were indeed less likely to train the low-contributor's work or train the low-contributor (H3e).

Table 6  
*Summary of Hypothesis-Testing Results*

	Hypothesis	Results
H1	<b>High</b> anticipation→ <b>High</b> Locus	N.S.
H2	<b>No</b> anticipation→ <b>High</b> Locus	Rejected
H3a	<b>No</b> anticipation→ <b>High</b> Controllability	N.S.
H3b	<b>No</b> anticipation→ <b>High</b> Anger	N.S.
H3c	<b>No</b> anticipation→ <b>Low</b> Sympathy	N.S.
H3d	<b>No</b> anticipation→ <b>High</b> Motivate/Reject	Rejected
H3e	<b>No</b> anticipation→ <b>Low</b> Compensate/Train	Support
H4	<b>Low</b> frequency→ <b>High</b> Locus	N.S.
H5a	<b>Low</b> frequency→ <b>High</b> Controllability	N.S.
H5b	<b>Low</b> frequency→ <b>High</b> Anger	N.S.
H5c	<b>Low</b> frequency→ <b>Low</b> Sympathy	N.S.
H5d	<b>Low</b> frequency→ <b>High</b> Motivate/Reject	Rejected
H5e	<b>Low</b> frequency→ <b>Low</b> Compensate/Train	N.S.
H6a	Uncontrollable>Justifications>Controllable in Sympathy	Partial Support
H6b	Uncontrollable<Justifications<Controllable in Anger	Rejected
H7	Explanations> No explanation in Attributional Confidence Difference	Support
H8	High > No anticipation in Attributional Confidence Difference	N.S.

*Note.* N.S. = The pattern was consistent with the hypothesis but the result was not significant.

Secondly, the prediction that anticipation for interaction frequency would influence teammates' attributions as well as their emotional and behavioral responses did not receive any empirical support. H4 through H5(e) hypothesized that people with low interaction frequency would be more likely to attribute the low-contributor's behavior to be something that was more dispositional and high in controllability; they were more likely to feel anger and less likely to feel sympathy; they were more likely to motivate or reject the low-contributor and less likely to compensate or train the low-contributor. The findings suggest that there was no significant difference between the low and high interaction frequency groups.

Finally, in line with the predictions regarding the effect of explanations given by the low-contributor on teammates' affective responses, the results showed that the explanations which attributed the cause to something that was uncontrollable solicited more sympathy than justifications did (H6a). Moreover, compared to people who didn't receive any explanation from the low-contributor in their teams, people who received explanations had greater attributional confidence (H7).

### **Research Implications**

This dissertation has laid the ground work for understanding how the prospect of future relationship and interaction frequency would affect the ability and motivation of team members to collect information about a low-contributor in their teams in order to make attributions of the underlying cause of the low-contribution. I examined how the model would change as its assumptions of the interdependency and ongoing relationship between observers and actors were challenged. In addition to testing the

hypothesized effect with the scenario methodology, this study contributed to scholarship by expanding the methodological repertoire to lab group experiments in which the opportunity for real interactions between observers and actors was provided and challenging the way that attribution was studied as one-time decision. By providing teammates with more information from the low-contributors themselves, I was able to examine the extent to which the explanations changed teammates' attributions and affective responses and to study attribution as a dynamic process. Below I will discuss the implications of each of the key findings.

#### **Effects of anticipation for future interaction.**

*Effect on the mechanism of attributions.* The results of the post-hoc exploratory analyses showed that anticipation for future interaction would moderate the effect of attributions on behavioral responses through affective responses. The indirect effect of locus and personal controllability on the likelihood to train the low-contributor via sympathy differed on the basis of the level of anticipation for future interaction. The indirect effect was stronger for people who had no anticipation for future interaction than it was to people with high anticipation. In other words, when people of no-anticipation condition and high-anticipation condition have the same likelihood to make dispositional attributions (i.e., higher scores in locus), people with no anticipation for future interaction were found to be more likely to train the low-contributor than people with high anticipation when they feel sympathetic toward the low-contributor. Although people in the no-anticipation condition were less likely to train than people in the high-anticipation condition (H3e), the sympathy mechanism was found to have a stronger impact on people with no anticipation for future

interaction than on people with high anticipation. In the past, LePine and van Dyne's (2001) model had only been assessed on the relationships hypothesized in the model (Jackson & LePine, 2003; Taggar & Neubert, 2004) and no research has examined the boundary conditions of the model. By challenging the assumptions of the model, this dissertation took a step further to investigate how the model would change under the influence of anticipation for future interaction. Regarding the effect of anticipation for future interaction, prior attribution research examined its impact on attention, memory recall, and number of attributions (e.g., Berscheid et al., 1976; Harvey et al., 1980; Monson et al., 1982). The findings of this present research demonstrated that anticipation for future interaction would not only influence attributions but also have direct impact on behavioral response as well as the indirect effect of attributions on behavioral responses through affects.

*Effect on attributions, affect, and behaviors.* The findings of the two studies provided inconclusive evidence for the competing hypotheses regarding the effect of anticipation for future interaction on locus attribution (H1 vs. H2). Traditional attribution literature suggested that people would make more dispositional attribution when they had high anticipation for future interaction than when they had low anticipation because dispositional information would be more useful to control the social environment (Berscheid et al., 1976; Monson et al., 1982; Shaver, 1975). I, however, proposed an alternative possibility, based on dual-process models (e.g., Chaiken, Liberman, & Eagly, 1989; Kahneman, 2011; Petty & Cacioppo, 1986), and argued that people with no anticipation for future interaction would be more likely to make dispositional attributions than people with high anticipation. Given that people

with no anticipation are less likely to adopt systematic processing, according to the dual-process model, they should be more likely to commit fundamental attribution error, overweighing the dispositional factors while overlooking situational factors, than people with anticipation. While the results of the first study did not suggest there was significant difference in locus attributions between no-anticipation and high-anticipation condition (H1), the findings of the second study could only provide tentative support for the traditional attribution perspective (H1) due to the manipulation failure. Inconclusive results could also be observed for H3 (e) where the first study suggested that the no-anticipation group had a significantly lower likelihood to train the low-contributor than did the high-anticipation group, whereas the results of the second study suggested the opposite.

The results of the second study about the effects of anticipation for future interaction on attributions, affective responses, and behavioral responses should be interpreted with caution because the manipulation of anticipation for future interaction failed. The fact that the high anticipation group had a significantly lower expectation to see their teammates in the allegedly second session of the experiment than did the no anticipation group, as demonstrated in manipulation check, suggested a boomerang effect. This was a flaw of the experiment design. When participants signed up for the study, they knew they would only need to be in the lab for one hour (one session) to receive the promised compensation. Thus, when the participants in the high anticipation condition were told before they began that they would work with the same team members again for another session of this experiment in the future, they knew they were not obligated to participate the second session with the same team members

if they are not interested in gaining more compensation. I can only suspect that participants in the high anticipation condition knew that they could simply refuse the experimenter's future invitation to the second session if they didn't want to work with the low-contributor again, given that the informed consent form only noted the compensation for the first session and they were given the compensation right after the first session. If I had used a shorter task and manipulated anticipation for future interaction by telling the participants the second session would be arranged right after the first task, the results might have looked different.

Regarding the potential reasons for which the difference in locus (H2) was not salient in the first study, the lack of situational cues provided in the scenario might be a potential problem. Using vignette methodology in the first study, as noted in Aguinis and Bradley (2014), allowed researchers to include only the factors of interest while excluding the confounding variables. However, it also limited the possibility for participants to make situational attributions when no situational cue was presented in the scenario and participants basically depended fully on the information given to make attributions. Previous studies (e.g., Jackson & LePine, 2003; Liden et al., 1999; Taggar & Neubert, 2004) which adopted the vignette methodology provided descriptions of two opposing causes, ability and effort, whereas both causes were held constant across conditions in my study when the focus was to manipulate the anticipation for future interaction and interaction frequency. Given that the participants were only provided with behaviors regarding the target, which were basically dispositional cues only and no situational cues at all, it may be difficult to observe any difference in the extent to which participants make dispositional

attributions as opposed to situation factors under the influence of the moderators of my interest.

How to provide participants with information from multiple observations or information from a single observation including both dispositional and situational cause in the scenario description when using vignette methodology should be considered in future research. As described in the literature review chapter, the covariation principle that Kelley (1967, 1973) proposed applies to situations where attribution makers have multiple observations whereas the configurational model describes a situation where people only have a single observation. The information that the participants received in the vignette used in study one was like a summary report of Pat's behaviors from multiple observations. The point is, whether it is covariation principle or configurational model that teammates use to make attributions, both require information about the situation, stimulus, or circumstance. For example, in the scenarios used by McArthur (1972), participants were provided with information of different combinations of high or low consensus, distinctiveness, and consistency. Given different combinations, participants could then attribute the cause of, for example, why John laughed at the comedian, to something about John, the comedian, or the place. With regard to the configurational model, the three different causal schemata that Kelley identified – schema for multiple sufficient causes, schema for compensatory causes, and schema for multiple necessary causes –, all provide people with information on at least two possible causes to consider. That said, perhaps a better design would have been to include both dispositional cues and situational cues in the scenarios and then to examine how anticipation for future

interaction and interaction frequency impact participants' attributions. The design I used, where I included information only about Pat's behavior may have primed the participants to only think about Pat.

Overall, future research should continue before one or the other competing hypothesis (H1 vs. H2) is abandoned. In addition to using the measurement which can tap participants' dispositional and situational attribution, as used in this study to improve how the effect of anticipation for future interaction on attribution was tested with dispositional attribution questions, future research could consider providing both dispositional cues and situational cues when using vignette methodology.

#### **Effects of anticipation for interaction frequency.**

It was found from the first study that anticipation for interaction frequency did not have a significant impact on participants' attributions, emotional responses, or behavioral responses toward the low-contributor. I hypothesized that interaction frequency and anticipation for high versus low interaction frequency would influence teammates' ability and motivation to collect information about the low-contributor in order to make attributions. As suggested by URT (Berger & Calabrese, 1975), increasing interaction frequency should provide opportunities for teammates to collect information about the target and reduce their uncertainties, which in turn, should increase the level of familiarity. The increasing level of familiarity should decrease the likelihood of committing the actor-observer bias, attributing actor's behaviors to dispositional factors, as found in the actor-observer bias literature (Fiedler et al., 1995; Prager & Cutler, 1990). Moreover, I predicted that it would be more likely for people

to release their anger and reject the low-contributor in teams with lower interaction frequency than in teams with higher interaction frequency for the relational impact of releasing negative emotions or demonstrating negative behaviors toward the low-contributor in teams with higher interaction frequency could be higher. However, the mean differences in locus, anger, sympathy, and likelihood to compensate between the two groups, as found in the first study, were not significant, although the direction of the mean differences was consistent with the hypotheses (H4 to H5e).

This set of hypotheses regarding the effect of interaction frequency might be better tested in the field than in the setup of an online experiment. Vignette methodology could only test whether “anticipation” for different interaction frequency would influence the “motivation” to collect information to make attributions. Researchers cannot directly test the impact of interaction frequency on participants’ ability to collect information using vignette methodology. A lab experiment is also limited if researchers cannot schedule multiple sessions in order to simulate frequent real-world meetings. Another possibility that no significant difference was observed in the first study is that the vignettes had no real impact on participants. Participants’ emotional and behavioral responses might not have been aroused as hypothesized because Pat’s low-contribution on the “imagined” teamwork described in the scenario had no “real-life” impact on participants. Future research could consider collecting survey data in the field to capture the potential influence of interaction frequency on participants’ past attributions, emotional and behavioral responses toward their colleagues in real team settings.

### **Effects of explanations.**

This dissertation hypothesized that teammates' attributions and affective responses would also vary depending on the new information given by the low-contributor and differ according to the types of explanations. I assumed that the explanations given by the low-contributors about why they didn't contribute could provide teammates with new information to make attributions of the underlying cause of the low-contributing behaviors. It was hypothesized that explanations which attributed the cause of the low-contributing behaviors to something that was uncontrollable would solicit more sympathy and less anger than did justifications, which admitted that the cause was controllable but appealed to a superordinate goal. Further, justifications were hypothesized to solicit more sympathy and less anger than the explanations which simply attributed the cause to something that was controllable. The results of the second study lend partial support to the hypothesis such that the explanations which attributed the cause to something that was uncontrollable solicited more sympathy than did justifications, but justifications did not solicit more sympathy than did explanations which attributed the cause to something that was controllable (H6a). In fact, justifications were found to solicit less sympathy than the explanations using controllable cause. Further, the hypothesized effect of explanations on anger (H6b) also was not supported

As briefly noted in the discussion section of the second study, the quality of explanations influenced whether they can achieve the intended effect. According to Hareli (2005), the success of an explanation depends on whether the explanation takes the circumstances into consideration. Hareli's ideas may provide a reason why the

explanation in the controllable condition unexpectedly solicited more sympathy than did the explanation given in justification condition. The specific wording of the controllable explanation (i.e., I was up late last night working on a paper. I got very little sleep last night.) described circumstances that most students could easily relate to, thereby eliciting high sympathy.

Moreover, as proposed by Hareli (2005), the extent to which an explanation takes into consideration the circumstance at hand is determined by its believability and appropriateness. As discussed in the discussion section of the second study, the reason that the explanation given in uncontrollable condition unexpectedly solicited more anger than did the lines in any other condition could result from the possibility that participants' did not believe the confederate had a migraine. When I was pilot testing and choosing which line to use for each condition, I did use the ratings of believability and appropriateness to choose the one that had higher rating for each condition. However, I should have made sure that the lines used in each condition also had comparable believability and appropriateness.

Nevertheless, the current study contributes to the previous literature in two ways. First, the current study adds to the previous literature by providing a more detailed comparison of controllable and uncontrollable causes with justifications. Past research on attributions and impression management tended to compare the effects of explanations, suggesting that the cause was controllable with the ones suggesting that the cause was uncontrollable (e.g., Juvonen & Weiner, 1993; Wood & Mitchell, 1981). Taking one step forward, this dissertation not only compared the effect of explanations using controllable cause and uncontrollable cause but also considered the

relative effect of justifications on attributions and affective responses. The current study found that the explanations using uncontrollable cause solicited greater sympathy than justifications. In addition, the quality of explanations would influence to what extent explanations could achieve the intended effect.

Secondly, this dissertation demonstrated that the information given by a low-contributing individual in teams could change how the teammates attribute the cause of the low-contributing behaviors and their affective responses. As indicated by the manipulation check of explanations and the results of H6a testing, the participants who received the explanations suggesting an uncontrollable cause indeed attributed the cause to something that was lower in personal controllability than did the participants in any other conditions. Moreover, the participants in the uncontrollable condition felt more sympathetic toward the low-contributor in their teams than did the participants in justification condition. Overall, the participants who received no explanation at all felt less sympathetic than did the participants in either the uncontrollable or controllable condition. According to these results, the original attribution theory of motivation and emotion could be revised by adding a loop between “information collection” and any part of the causal dimensions (locus, controllability, stability) for the potential impact of communication on the ensuing part of the attribution process.

#### **Attributional confidence.**

The data from study 2 showed that the attributional confidence of the participants in the explanation condition increased over time whereas the attributional confidence of the participants in the no-explanation condition decreased after mid-point (H7). This finding points to a possible mechanism for the effect of the

explanations on attribution process. Providing an explanation could not only change team members' attributions directly but also increase their attributional confidence. By measuring attributional confidence at the mid-point and at the end of each session, this dissertation research was able to examine the change of attributional confidence before and after the low-contributing individual provided an explanation for their negative behavior. This dissertation contributes to attribution literature by studying attribution as a continuing and interactive process, which provides opportunities to understand the mechanism of explanations on attribution process.

Moreover, measuring attributional confidence at the mid-point and at the end of each session also helped to capture the potential mechanism of the hypothesized effect of anticipation for future interaction. It was assumed that the participants in the high-anticipation condition would experience more uncertainty than did the participants in no-anticipation condition. The data from study 2 provided support for this assumption. However, the current study did not find support for the point effect of explanations to decrease the uncertainty that the participants in the high-anticipation condition (H8). One plausible explanation might be that the effect of different kinds of explanations on attributional confidence varied and not each type of explanations worked well to reduce the uncertainty, considering that the results of H6a suggested that not all explanations could solicit more sympathy than the control condition.

Last of all, the current study offered a way to capture participants' motivation and ability in information-collecting by measuring the attribution uncertainty that participants experienced toward the low-contributing individual. To avoid revealing the purpose of the study or interrupting the meeting for too long, I did not choose to

directly measure participants' motivation and ability in information-collecting to make causal attributions of the low-contributor's behaviors. Alternatively, I measured their uncertainty with the scale of attributional confidence, which provided a way to understand the indirect mechanism.

### **Practical Implications**

This dissertation is the first step of the research program to develop an interpersonal intervention for the problem of motivation losses in teams. It investigated the potential impacts of the prospect of future relationship and interaction frequency on how teammates make attributions of the behaviors of a low-contributor in teams. I hoped to find supporting evidence that people, under the circumstance of not anticipating to see their teammates in the future or having high interaction frequency, would be more likely to make the fundamental attribution error than would people with high anticipation for future interaction or high interaction frequency. It is important to examine under what circumstances people are more likely to commit fundamental attribution error because they can be reminded when they are under the influence of this type of cognitive bias.

The results of the first study suggested that people with no anticipation for future interaction were less likely to train the low-contributor than were people with high anticipation for future interaction. However, the results of the moderated mediation analyses showed that the sympathy mechanism had a stronger impact on people with no anticipation for future interaction than on people with high anticipation. That is, for people with no anticipation, compared to people with high

anticipation, to train the low-contributor, the likelihood to train depends more on the extent to which they feel sympathetic toward the low-contributor. According to these results, anticipation for future interaction, as expected, did have an impact on how people make attributions. People who work in some type of ad hoc teams where people didn't know each other before and there is no future interaction, compared to teams where there is future interaction, are less likely to take the effort to train their low-contributing teammate. The findings may reflect the way people manage their busy lives by allocating their time and energy to things that have future impact. However, the findings also indicated that factors as simple as the characteristics of group settings such as the prospect of future relationship could influence how we make sense of a low-contributor's behaviors, which in turn, influences how we feel and how we react. When our judgments are not influenced by the fact itself (the underlying cause of the low-contributing behaviors could be low ability, low motivation, task difficulty, unforeseen emergencies, etc.) but rather by the group setting, we need to ask ourselves if our biased judgments would somehow also influence the possibility of achieving high group performance when we refuse to train or offer help to the low-contributor in teams. That said, when there are low-contributors in teams, I suggest that we could first examine whether our judgments are clouded by certain characteristics of a team such as the prospect of future interaction with the teammates. Then, it will help if we can give ourselves opportunities to understand the potential underlying cause of the low-contributing behaviors through further interactions rather than jumping into conclusions with heuristics.

Team leaders, on the other hand, could try ways to leverage the effect of the indirect effects to get work done when there is a low-contributor in the team. For example, team leaders could provide the teams with opportunities to consider the situational factors of the circumstances or the factors suggesting low personal controllability, which would increase the chance of making teammates feeling sympathetic toward the low-contributor. Explanations that emphasize situational factors such as “someone wasn’t contributing because he or she was assigned too many projects at a time and this prevented him or her from investing enough time and effort to the current project” may stimulate team members’ sympathy toward the low-contributor, and in turn, lead to a higher likelihood for teammates to compensate the low-contributor’s lack of work. Most importantly, the explanations that suggesting situational factors should be true, believable, and taking into account the actual circumstances of a team, as suggested by Hareli (2005).

For people who contribute less in their teamwork, the findings of this dissertation suggested that providing explanations which could attribute the cause of their behaviors to something that was uncontrollable would be the best strategy to solicit sympathy from their teammates. Alternatively, offering a justification which admits the cause was controllable but there was a higher moral goal that should be considered could gain sympathy as well. Both strategies were found to evoke more sympathy than saying nothing at all. In fact, offering explanations, either attributing the cause to be something that was uncontrollable, controllable, or controllable but with a higher moral goal to be considered, was found that it could reduce teammates’ uncertainty about the low-contributor significantly more, as reflected in the increase of

attributional confidence, than saying nothing. The discussions here are based on the assumption that the explanation is true. If the suggestions provided here are used to make up explanations, which are false, insincere, and unbelievable, as noted in the discussions about the uncontrollable condition used in this study (i.e., having a migraine), it is very likely that it will solicit anger as found in the current study.

### **Limitations**

The studies reported in this dissertation have some limitations. First, the manipulation of anticipation for future interaction in the second study created an unforeseen consequence, and the data could not be used to test H1, H2, and H3. The manipulation of the anticipation for future interaction is critical for it is the key to activate people's interests in making attributions of the underlying cause of the observed problem (Berscheid et al., 1976). As I suggested in the previous discussions, future research could consider scheduling participants' time for two sessions in a row when testing the hypothesis through lab experiments. Another possibility is to use bona fide student teams. Future research can manipulate anticipation for future interaction by having students stay with the same teammates for their team projects.

Secondly, H2 through H5 regarding the effects of anticipation for future interaction and of interaction frequency on attribution process were based on the argument that these two factors would influence the motivation and ability of teammates to seek out information about the low-contributor in their teams. However, I didn't directly measure the changes of cognitive energy the participants used. I only measured the uncertainty that teammates experienced about the target and to what

extent they had tried to decrease the uncertainty, which was operationalized by attributional confidence. If future research can measure the cognitive energy that teammates invest in making attributions of the target, for example, with a subjective rating scale of cognitive load (Leppink, Paas, Van der Vleuten, Van Gog, & Van Merriënboer, 2013), the assumptions behind H2 through H5 will be supported with a stronger buttress.

Thirdly, the present design did not permit me to fully test the effect of explanations on the whole model, from attributions through affective response to behavioral response, because the explanation was delivered late the session when it was too late to affect the other group members' behavioral responses. My rationale for this design choice was that I wanted participants to experience that the confederate did not contribute, which was needed to activate attribution processes. Future research could consider running two sessions to test the whole model. The effect of explanations on teammates' behaviors toward the low-contributor can be captured by letting the confederate provides the explanation at the end of the first session and then observe how the real participants react and interact with the confederate in the second session.

Finally, this dissertation paves the way to finding an interpersonal intervention for the problem of motivation loss in teams with the hope that the problem could be dealt with immediately and effectively in teams. This dissertation, as the first step, could only provide theoretical development and empirical investigation in understanding how people react and make sense of the low-contributor's behaviors.

Next step for the endeavors to develop interpersonal interventions could be to examine which type of behavioral responses (i.e., train, compensate, motivate, or reject) would stimulate the motivation of the low-contribution, be it an intentional act compared to an unintentional act, to make more effort. Another possibility is to collect survey data to understand how people handle the emotions, especially if it was anger, that they experienced when they encountered low-contributors and what strategies they have tried and proved to be effective. The results of the survey data along with the findings of the dissertation can then be used to develop potential coping strategies and to examine the effect of the strategies on individual and team motivation, team dynamics, and team performance.

## **Conclusions**

This research is a first step in developing interpersonal interventions for the problem of motivation loss in teams. Building on the attributional model of peer responses to low-performers (LePine & van Dyne, 2001), this dissertation challenged the assumptions of the model by considering the influence of the prospect of future relationship and interaction frequency on the relationships between attributions, affective response, and behavioral responses. It was found that the prospect of future relationship positively influences the likelihood of training the low-contributor in teams. In addition, the prospect of future relationship and interaction frequency both moderated the effect of locus on the likelihood to train or compensate through sympathy. The findings of this dissertation contribute to attribution literature by demonstrating that anticipation for future interaction influenced not only the

teammates' behavioral responses toward the low-contributor but also the effect of attributions on behavioral responses through affective responses. Breaking the norm of how past research studying attribution as a static decision, this research tried to study attribution as a dynamic process by considering the influence of explanations provided by the low-contributors in teams on teammates' attributions and emotions. The findings provided empirical evidence that explanations could increase teammate's attributional confidence in the low-contributor.

APPENDICES

APPENDIX A



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f. 607-255-0758  
www.irb.cornell.edu

Institutional Review Board for Human Participants

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**Concurrence of Exemption**

**To:** YI-CHING Liu  
**From:** Amita Verma, Director, ORIA  
**Approval Date:** February 08, 2015  
**Protocol ID#:** 1501005254  
**Protocol Title:** Teammates and Teamwork

A handwritten signature in black ink that reads "Amita Verma".

Your above referenced request for **Exemption from IRB Review** has been approved according to Cornell IRB Policy #2 and under paragraph 2 of the Department of Health and Human Services Code of Federal Regulations 45CFR 46.101(b).

Please note the following:

- Investigators are responsible for ensuring that the welfare of research subjects is protected and that methods used and information provided to gain participant consent are appropriate to the activity. Please familiarize yourself with and conduct the research in accordance with the ethical standards of the Belmont Report (<http://www.hhs.gov/ohrp/policy/belmont.html>).
- Investigators are responsible for notifying the IRB office of change or amendments to the protocol and acquiring approval or concurrence **BEFORE** their implementation.
- Progress reports or requests for continuation of approval are not required for this study.

For questions related to this application or for IRB review procedures, please contact the IRB office at [irbexemptions@cornell.edu](mailto:irbexemptions@cornell.edu) or 254-5162. Visit the IRB website at [www.irb.cornell.edu](http://www.irb.cornell.edu) for policies, procedures, FAQs, forms, and other helpful information about Cornell's Human Participant Research Program.

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for each submission.

APPENDIX B

*Measurement Items and Coefficient Alphas for First Study*

Construct	Item	Cronbach's $\alpha$
Anticipation for Future Interaction	1	.82
	2	
	3	
Anticipation for Interaction Frequency	1	.89
	2	
	3	
Perceived Pat's motivation	1	.89
	2	
	3	
Perceived Pat's loafing	1	.62
	2	
	3	
Anger	1	.88
	2	
	3	
Sympathy	1	.77
	2	
	3	
Locus	1	.72
	2	
	3	
External Controllability	1	.78
	2	

	3	Other people can regulate. ↔ Other people cannot regulate.	
Personal Controllability	1	Manageable by Pat. ↔ Not manageable by Pat.	
	2	Pat can regulate. ↔ Pat cannot regulate.	.82
	3	Over which Pat has power. ↔ Over which Pat has no power.	
Stability	1	Permanent ↔ Temporary	
	2	Stable over time. ↔ Variable over time.	.65
	3	Unchangeable ↔ Changeable	
Train	1	Teach Pat how to do the work.	
	2	Show Pat a more efficient way to complete the tasks.	
	3	Teach pat how to prioritize responsibilities.	.90
	4	Provide Pat with the best way to complete the work.	
Compensate	1	Take on some of Pat's duties as your own.	
	2	Pitch in and do some of Pat's job.	
	3	Do what you can to get Pat's work done.	.96
	4	Complete unfinished tasks of Pat's.	
Motivate	1	Tell Pat that poor performance will no longer be tolerated.	
	2	Point out the consequences of poor performance of Pat.	.91
	3	Ask Pat to work harder.	
	4	Explain to Pat that poor performance is unacceptable in this group.	
Reject	1	Exclude Pat from social functions with the group.	
	2	Act as though Pat is no longer a member of the group.	.88
	3	Ignore comments and suggestions made by Pat.	
	4	Avoid interactions with Pat.	

APPENDIX C

*Means, Standard Deviations, and One-Way ANOVA for the Effects of Anticipation for Future Interaction (First Study)*

Standardized Variable	No Anticipation		Anticipation		<i>F</i>	<i>p</i>	<i>w</i> <sup>2</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Anger	.02	1.00	-.02	1.00	.09	.77	-.00
Sympathy	-.01	.97	.01	1.03	.05	.83	-.00
Locus	-.00	1.03	.00	.98	.00	.95	-.00
EControl	.02	1.00	-.02	1.00	.10	.75	-.00
PControl	.01	1.03	-.01	.97	.02	.89	-.00
Stability	-.06	.98	.06	1.01	.82	.37	-.00
Train	-.17	1.07	.17	.90	7.09	.01	.02
Compensate	-.12	1.00	.12	.99	3.50	.06	.01
Motivate	-.02	1.02	.02	.98	.09	.77	-.00
Reject	-.01	1.02	.01	.98	.01	.92	-.00

*Note.* EControl = external controllability; PControl = personal controllability.

*Means, Standard Deviations, and One-Way ANOVA for the Effects of Anticipation for Interaction Frequency (First Study)*

Standardized Variables	Low Frequency		High Frequency		<i>F</i>	<i>p</i>	<i>w</i> <sup>2</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Anger	.02	.95	-.01	1.05	.052	.82	-.00
Sympathy	-.03	1.02	.03	.98	.21	.65	-.00
Locus	.01	1.03	-.01	.98	.02	.88	-.00
EControl	-.09	.97	.08	1.03	1.72	.20	.00
PControl	.06	1.02	.08	1.03	.75	.39	-.00
Stability	-.01	.94	.01	1.05	.05	.83	-.00
Train	.02	.90	-.02	1.09	.08	.78	-.00
Compensate	-.03	1.03	.03	.97	.16	.69	-.00
Motivate	-.03	.93	.03	1.06	.26	.61	-.00
Reject	-.10	.88	.10	1.09	2.38	.12	.01

*Note.* EControl = external controllability; PControl = personal controllability.

APPENDIX D



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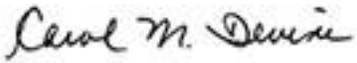
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## Institutional Review Board for Human Participants

### TRIENNIAL PROTOCOL APPROVAL- NO FEDERAL FUNDS

**To:** YI-CHING Liu

**From:** Carol Devine, IRB Chairperson 

**Protocol ID#:** 1503005379

**Protocol Title:** Teamwork and Group Interaction Process

**Approval Date:** May 05, 2015

**Expiration Date:** May 04, 2018

Cornell University's Institutional Review Board for Human Participants (IRB) has reviewed and approved the inclusion of human participants in the research activities described in the protocol referenced above.

**Special Conditions for Triennial Approval of this Protocol:** This protocol was granted approval for three years until **May 04, 2018** as it does not involve federal funding and is therefore eligible for Triennial review under the IRB policy #21 ([www.irb.cornell.edu/policy](http://www.irb.cornell.edu/policy)). As Principal Investigator for this project, you are responsible for informing the IRB and seeking re-review if at any point during the course of this project, Federal funds may be used to support any part of it. Failure to seek timely review and approval could result in an inability to use research data for the purposes of the Federal grant. Please refer to IRB policy #21 ([www.irb.cornell.edu/policy](http://www.irb.cornell.edu/policy)) for more information.

The following personnel are approved to perform research activities on this protocol:

- YI-CHING Liu
- Poppy McLeod

- Amylisa Christophe
- Elijah Weber-Han
- Lindsay Hand
- Rebecca Lester
- Travis Cabbell

This approval by the IRB means that human participants can be included in this research. However, there may be additional university and local policies that apply before research activities can begin under this protocol. It is the investigator's responsibility to ensure these requirements are also met.

Please note the following important conditions of approval for this study:

1. All consent forms, records of study participation, and other consent materials **must** be held by the investigator for **five years** after the close of the study.
2. Investigators must submit to the IRB any **proposed amendment** to the study protocol, consent forms, interviews, recruiting strategies, and other materials. Investigators may not use these materials with human participants until receipt of written IRB approval for the amendment. For information about study amendment procedures and access to the Amendments application form, please refer to the IRB website: <http://www.irb.cornell.edu/forms>.
3. Investigators must promptly report to the IRB any **unexpected events** involving human participants. The definition of prompt reporting depends upon the seriousness of the unexpected event. For guidance on recognizing, defining, and reporting unexpected events to the IRB, please refer to the IRB website: <http://www.irb.cornell.edu/policy>.

If the use of human participants is to continue beyond the assigned approval period, the protocol must be re-reviewed and receive continuing approval. As the Principal Investigator it is your responsibility to obtain review and continued approval before the expiration date. Applications for renewal of approval must be submitted sufficiently in advance of the expiration date to permit the IRB to conduct its review before the current approval expires. Please allow three weeks for the review.

**Any research-related activities -- including recruitment and/or consent of participants, research-related interventions, data collection, and analysis of identifiable data -- conducted during a period of lapsed approval is unapproved research and can never be reported or published as research data.** If research-related activities occur during a lapse in the protocol approval, the activities become a research compliance issue and must be reported to the IRB via an unexpected event form ([www.irb.cornell.edu/forms](http://www.irb.cornell.edu/forms)).

**\*\*If you do not plan to renew your protocol approval in three years, please provide the IRB with a Project Closure form. A link to the**

**Project Closure form can be found at  
<http://www.irb.cornell.edu/forms/>.**

For questions related to this application or for IRB review procedures, please contact the IRB office at [irbhp@cornell.edu](mailto:irbhp@cornell.edu) or 255-6182. Visit the IRB website at [www.irb.cornell.edu](http://www.irb.cornell.edu) for policies, procedures, FAQs, forms, and other helpful information about Cornell's Human Participant Research Program. Please download the latest forms from the IRB website [www.irb.cornell.edu/forms/](http://www.irb.cornell.edu/forms/) for each submission.

Cc: Poppy McLeod

## APPENDIX E

### Instructions for Confederates

During this group meeting, please act in a way that does not contribute to the group task. Please don't try to act lazy, or sloppy, or not conscientious. **Please simply not to contribute.**

#### **Specific rules to follow:**

After receiving the information packet for the whole group, **don't initiate any conversation.** Take your time reading the materials, but stop reading when it looks like everyone else is done. **Be careful not to appear that you don't understand.**

Ask questions **only to clarify** what the group is asked to do.

When you are assigned a certain task, try to shirk your duties. You can say, **"I'm not sure what I should do."**

When everybody starts to do their assigned task, you neglect your duties. **Ask questions to clarify what you were assigned to do. Be careful not to appear that you don't understand.**

Never propose new idea or solve a problem faster than any of your group members.

If you are asked to provide your opinion about what was just said by participants, you can think for a few seconds and say, **"Yes, it makes sense.";** **"I agree with what everyone else has said.";** **"I don't have anything new to add." "I'm just listening. I'll add something if I have anything to add."**

If you are asked to provide your opinion with no prior discussions or when you asked to take a side, you can think for a few seconds and say, **"I need more time.";** **"I need to think about it some more." "I'm not sure; I need to think about it more."**

Do not work hard to help the group complete its activities and achieve its goals.

Do not volunteer to record a solution for the group. If you are assigned to do, reluctantly agree to record a solution by **saying, "Oh, ok."**

After you drop the must-say line, if you are asked to provide opinion. You can say, **"I'm not sure." "Well, I think you've covered it." "You guys have done a good job!" "You guys have made good points already!"**

#### **Must do:**

Do not finish what you are assigned to do.

#### **Must say:**

(Depending on the condition you are assigned to, **please say the following sentence after experimenter comes into the room to remind the group 5 minutes left. Don't say I'm sorry, but simply say the following line.**

1. No explanation provided
2. **"Oh, we only have 5 minutes left. Well, I guess I haven't done a lot, have I? I haven't been feeling well. I'm having a really bad migraine today."**
3. **"Oh, we only have 5 minutes left. Well, I guess I haven't done a lot, have I? I was up late last night working on a paper. I got very little sleep last night."**
4. **"Oh, we only have 5 minutes left. Well, I guess I haven't done a lot, have I? I thought it was more important to listen. It sounded like the information you guys has is more relevant."**

**If your group finishes before the experimenter comes into the room to remind the group 5 minutes left, Please notice the changes in the underlined part.**

1. No explanation provided
2. “Oh, we’re done?! Well, I guess I haven’t done a lot, have I? **I haven’t been feeling well. I’m having a really bad migraine today.**”
3. “Oh, we’re done?! Well, I guess I haven’t done a lot, have I? **I was up late last night working on a paper. I got very little sleep last night.**”
4. “Oh, we’re done?! Well, I guess I haven’t done a lot, have I? **I thought it was more important to listen. It sounded like the information you guys has is more relevant.**”

**To keep the consistency across confederates:**

- Please try not to be the first to arrive and not to be the last to leave so that the real participants won't see you and experimenter together and suspect that you might be the confederate.
- In order to avoid any confounding factors, please try to **keep your emotions consistent** across sessions. I know it's hard to be "neutral," but please try not to be too excited, sad, or upset.
- Also, if you don't talk to every participant prior to the study when you are waiting in the lab, try not to do it with some participants only. It's important because your conversations with SOME participants prior to the study would influence how they judge you in the post-task survey. You would give them extra information about you to make judgment and this is something that would impact the results. I know this will be very hard for Lindsay and Rebecca because you will definitely come across some COMM classmates. In that case, you can maintain a minimum conversation with your classmates if you are asked questions prior to the study and you don't need to act aloof. The thumb rule is to act consistently across sessions.
- It's also important for me to keep the consistency across confederates. After I reviewed some of the video recordings, I want to let you know that you can smile. It's what people usually do when they introduce themselves to strangers, right? So, please smile when you introduce your name and role. I need to keep participants' judgments about you guys mainly from your lack of effort in the task rather than your emotions.

**Link to the confederates’ survey:** [https://cornell.qualtrics.com/SE/?SID=SV\\_4I2pleMJuGFCZ1j](https://cornell.qualtrics.com/SE/?SID=SV_4I2pleMJuGFCZ1j)

## APPENDIX F

### Items Used in Pre-Task Questionnaire of Study 2

#### Big Five (Goldberg, 1992)

Extraversion	1. Am the life of the party.
	2. Feel comfortable around people.
	3. Start conversations.
	4. Talk to a lot of different people at parties.
	5. Don't mind being the center of attention.
	6. Don't talk a lot.
	7. Keep in the background.
	8. Have little to say.
	9. Don't like to draw attention to myself.
	10. Am quiet around strangers.
Agreeableness	1. Am interested in people.
	2. Sympathize with others' feelings.
	3. Have a soft heart.
	4. Have time out for others.
	5. Feel others' emotions.
	6. Make people feel at ease.
	7. Am not really interested in others.
	8. Insult people.
	9. Am not interested in other people's problems.

	10. Feel little concern for others.
Conscientiousness	1. Am always prepared.
	2. Pay attention to details.
	3. Get chores done right away.
	4. Like order.
	5. Follow a schedule.
	6. Am exacting in my work.
	7. Leave my belongings around.
	8. Make a mess of things.
	9. Often forget to put things back in their proper place.
	10. Shirk my duties.
Emotional stability	1. Am relaxed most of the time.
	2. Seldom feel blue.
	3. Get stressed out easily.
	4. Worry about things.
	5. Am easily disturbed.
	6. Get upset easily.
	7. Change my mood a lot.
	8. Have frequent mood swings.
	9. Get irritated easily.
	10. Often feel blue.
	1. Have a rich vocabulary.

Intellect	2. Have a vivid imagination.
	3. Have excellent ideas.
	4. Am quick to understand things.
	5. Use different words.
	6. Spend time reflecting on things.
	7. Am full of ideas.
	8. Have difficulty understanding abstract ideas.
	9. Am not interested in abstract ideas.
	10. Do not have a good imagination.

Need for Closure (Kruglanski et al., 1993)

1. I think that having clear rules and order at work is essential for success.
2. Even after I've made up my mind about something, I am always eager to consider a different opinion.
3. I don't like situations that are uncertain.
4. I dislike questions which could be answered in many different ways.
5. I like to have friends who are unpredictable.
6. I find that a well ordered life with regular hours suits my temperament.
7. When dining out, I like to go to places where I have been before so that I know what to expect.
8. I feel uncomfortable when I don't understand the reason why an event occurred in my life.
9. I feel irritated when one person disagrees with what everyone else in a group believes.

10. I hate to change my plans at the last minute.
11. I don't like to go into a situation without knowing what I can expect from it.
12. When I go shopping, I have difficulty deciding exactly what it is that I want.
13. When faced with a problem I usually see the one best solution very quickly.
14. When I am confused about an important issue, I feel very upset.
15. I tend to put off making important decisions until the last possible moment.
16. I usually make important decisions quickly and confidently.
17. I would describe myself as indecisive.
18. I think it is fun to change my plans at the last moment.
19. I enjoy the uncertainty of going into a new situation without knowing what might happen.
20. My personal space is usually messy and disorganized.
21. In most social conflicts, I can easily see which side is right and which is wrong.
22. I tend to struggle with most decisions.
23. I believe that orderliness and organization are among the most important characteristics of a good student.
24. When considering most conflict situations, I can usually see how both sides could be right.
25. I don't like to be with people who are capable of unexpected actions.
26. I prefer to socialize with familiar friends because I know what to expect from them.
27. I think that I would learn best in a class that lacks clearly stated objectives and requirements.

28. When thinking about a problem, I consider as many different opinions on the issue as possible.
29. I like to know what people are thinking all the time.
30. I dislike it when a person's statement could mean many different things.
31. It's annoying to listen to someone who cannot seem to make up his or her mind.
32. I find that establishing a consistent routine enables me to enjoy life more.
33. I enjoy having a clear and structured mode of like.
34. I prefer interacting with people whose opinions are very different from my own.
35. I like to have a place for everything and everything in its place.
36. I feel uncomfortable when someone's meaning or intention is unclear to me.
37. When trying to solve a problem I often see so many possible options that it's confusing.
38. I always see many possible solutions to problems I face.
39. I'd rather know bad news than stay in a state of uncertainty.
40. I do not usually consult many different opinions before forming my own view.
41. I dislike unpredictable situations.
42. I dislike the routine aspects of my work (studies).

## APPENDIX G

### Scripts for Experimenters

*(Experimenter fills out the date, time, group on mid-point survey and the solution memo.)*

(Experimenter gets participants' NetID after they arrive. This is to prepare an email draft for sending participants the link to the post-task survey after they finish.)

Say: I am going to ask your group to examine a case study situation about a business school, and through discussion to develop a set of recommendations about this case.

Say: The document in front of you contains information regarding the school's situation that you will need for completing your task. Each of your roles has been invited to this meeting because you have important and unique information and perspectives regarding the case. This is a complex case. Your group's objective is to fully process the information and to reach a group decision regarding (a) what your group sees as the main problem in the case and (b) what is your group's recommendation to the academic policy committee chairperson regarding solutions to this problem. Your group's specific answers should be written on the Problem and Solution Memo and please hand it back to me once you finish the task. The answers should be concise and clear.

(Experimenter gives Problem and Solution Memo to the group.)

-----  
(Experimenter says the following part according to the manipulating condition of anticipation for future interaction)

1. No condition: (There is nothing to say for this condition.)
2. Yes condition: Say: There are two-phases of this study. This is the first phase. The second phase will be scheduled at another time. Once you finish the first phase, you will be working on another task with the same team members for the second phase.

-----  
Say: Successful completing of the project requires equal contributions from all members and high quality of group discussion. In order to make the correct decision, you need to share your unique information with each other. Groups that correctly identify the main problem and find out a feasible solution will be placed into a lottery. We will randomly select three groups that identify the right problem and propose the solution that scores above the average to give each group a US\$ 150 cash prize, consisting of US\$50 per member.

To understand the process of how you do the task together as a team and how people perceive each other, I will video-record your team discussion, and I will come in about 20 minutes into your discussion to ask you some questions. When there are only 5 minutes remaining, I'll come in again to remind you. Your group will now have up to 40 minutes to resolve the case. Manage your time wisely. Remember, you should diligently represent the interests and perspectives of your role in the case. Your group

has two goals: 1) reach a decision regarding the main problem in the case and to 2) reach a recommendation for the case. Please begin the discussion by introducing yourself to each other after I set up the audio and video recorder and the place a number in front of you.

*(Experimenter starts voice and video recording before leaving the room. Remember to close the curtain.)*

*(When 20 minutes pass, experimenter comes in with the mid-point survey.)*

Say: Sorry to interrupt, but here are a few questions that we would like you to answer quickly to help us track how your discussion is going.

*(Experimenter should not engage any conversation with the group except giving them the mid-point survey. Collect the survey once they finish it and leave the room promptly.)*

Say: Thank you for your feedback. Please proceed.

*(Experimenter notifies the group when there are only 5 minutes remaining.)*

Say: 5 minutes left.

*(When the time is up, experimenter stops the recording and emails the survey link to ALL THREE participants respectively.)*

Say: Please fill out a very brief post-discussion questionnaire using the link that I just sent to your email box and please let me know once you finish it. Please do not talk to your teammates or share your questionnaires with any of your teammates.

*(Experimenter debriefs.)*

Say: The purpose of our experiment is to see how individual effort affects group interaction and group performance. We are particularly interested in how people perceive their teammate during the process. The questionnaires you completed before the experiment measured the individual differences relevant to how people approach working in teams. The questionnaires you completed today measured your perception of one of your teammates. We expect to understand how different levels of effort in teamwork will influence the group interaction process and group performance.

We are still running this study, so please do not discuss our experiment to other people. More details of this research study will be disclosed via email after the study is completed.

We really appreciate your help today. If you have further question, please contact the researcher, Angel Liu. We will give you the SONA credit later tonight.

*(If being asked to give them my contact information, say the following)*

Here is her contact information. *(Experimenter distributes Angel's contact info sheet.)*

APPENDIX H

*Measurement Items and Coefficient Alphas for Second Study*

Construct	Item	Cronbach's $\alpha$
Anticipation for Future Interaction	1	It's possible to see some of the group members in the future.
	2	Running into some of the group members on other occasions is unlikely. (R)
	3	In the future, it's likely that I will work with some of the same group members in other groups.
Perceived Member #1's loafing	1	Member # 1 was trying as hard as he/she can.
	2	Member # 1 was "free-loader."
	3	Member # 1 was contributing less than I anticipated.
Anger	1	I feel mad towards Member #1.
	2	I feel upset towards Member #1.
	3	I feel angry toward Member #1.
Sympathy	1	I feel sympathy towards Member #1.
	2	I feel pity towards Member #1.
	3	I feel compassion for Member #1.
Locus	1	That reflects an aspect of Member #1. ↔ Reflects an aspect of the situation.
	2	Inside of Member #1. ↔ Outside of Member #1.
	3	Something about Member #1. ↔ Something about others.
External Controllability	1	Over which others have control. ↔ Over which others have no control.
	2	Under the power of other people. ↔ Not under the power of other people.
	3	Other people can regulate. ↔ Other people cannot regulate.
Personal Controllability	1	Manageable by Member #1. ↔ Not manageable by Member #1.
	2	Member #1 can regulate. ↔ Member #1 cannot regulate.
	3	Over which Member #1 has power. ↔ Over which Member #1 has no power.
Stability	1	Permanent ↔ Temporary
	2	Stable over time. ↔ Variable over time.

		3	Unchangeable ↔ Changeable	
Train	1		Showed Member #1 how to prioritize the steps in the task.	.81
	2		Showed Member #1 a more efficient way to complete the task.	
	3		Suggested Member #1 the best way to complete the work.	
Compensate	1		Took on some of Member #1's part of the task as your own.	.91
	2		Pitched in and do some of Member #1's part of the task.	
	3		Completed parts of the task if Member #1 didn't finish his/her part.	
	4		Did what you could to get Member #1's part of the task done.	
Motivate	1		Told Member #1 that poor performance would not be tolerated if he/she was responsible for your team's potential poor team performance.	.82
	2		Pointed out the consequences of potential poor team performance to Member #1.	
	3		Asked Member #1 to work harder if he/she didn't work hard enough.	
Reject	1		Ignored comments and suggestions made by Member #1.	.72
	2		Avoided interactions with Member #1.	
	3		Acted as though Member #1 was no longer a member of the group.	
Attributional Confidence	1		How confident are you in your general ability to predict how Member # 1 will behave in the rest of the session? ___%	.86
	2		How certain are you that Member # 1 likes you? ___%	
	3		How accurate do you think you would be in predicting the values Member # 1 holds? ___ %	
	4		How accurate do you think you would be in predicting Member # 1's attitudes? ___%	
	5		How well do you think you could predict Member # 1's feelings and emotions? ___%	
	6		How much can you empathize with (share) the way Member # 1 feels about himself/herself?	

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7 How well do you know Member # 1?  
\_\_\_\_%

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APPENDIX I

*Means, Standard Deviations, and One-Way ANOVA for the Effects of Anticipation for Future Interaction*

Standardized Variable	No Anticipation		Anticipation		<i>F</i>	<i>p</i>	<i>w</i> <sup>2</sup>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Anger	-.01	.93	.01	1.07	.05	.83	-.00
Sympathy	.03	1.01	-.03	.99	.23	.63	-.00
Locus	-.16	1.02	.17	.96	6.52	.01	.02
EControl	.05	1.01	-.05	.99	.58	.45	-.00
PControl	.05	.97	-.05	1.03	.63	.43	-.00
Stability	-.08	.94	.09	1.06	1.75	.19	.00
Train	.07	1.07	-.07	.91	1.10	.30	.00
Compensate	.03	.97	-.03	1.03	.19	.66	-.00
Motivate	-.02	1.03	.02	.97	.06	.80	-.00
Reject	.06	1.07	-.07	.92	1.06	.31	.00

*Note.* EControl = external controllability; PControl = personal controllability.

## REFERENCES

- Aggarwal, P., & O'Brien, C. L. (2008). Social loafing on group projects: Structural antecedents and effect on student satisfaction. *Journal of Marketing Education*, 30, 255–264. doi:10.1177/0273475308322283
- Aguinis, H., & Bradley, K. J. (2014). Best practice recommendations for designing and implementing experimental vignette methodology studies. *Organizational Research Methods*, 17, 1094428114547952–. doi:10.1177/1094428114547952
- Atzmüller, C., & Steiner, P. M. (2010). Experimental vignette studies in survey research. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences*, 6, 128–138.
- Barnes, R. D., Ickes, W. J., & Kidd, R. (1979). Effects of perceived intentionality and stability of another's dependency on helping behavior. *Personality and Social Psychology Bulletin*, 5, 367–372.
- Barrett, S., Agmon, N., Hazon, N., Kraus, S., & Stone, P. (2014). Communicating with unknown teammates. *Frontiers in Artificial Intelligence and Applications*, 263, 45–50. doi:10.3233/978-1-61499-419-0-45
- Berger, C. R., & Calabrese, R. J. (1975). Some explorations in initial interaction and beyond : Toward a developmental theory of interpersonal communication. *Human Communication Research*, 1, 99–112. doi:10.1111/j.1468-2958.1975.tb00258.x
- Berscheid, E., Graziano, W., Monson, T., & Dermer, M. (1976). Outcome

dependency: Attention, attribution, and attraction. *Journal of Personality and Social Psychology*, 34, 978–989. doi:10.1037/0022-3514.34.5.978

Byrne, S., & Hart, P. S. (2009). The “boomerang” effect: A synthesis of findings and a preliminary theoretical framework. In C. Beck (Ed.), *Communication Yearbook 33* (pp. 3–38). Mahwah, NJ: Lawrence Erlbaum.

Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 215–252). New York, NY: Guilford.

Clatterbuck, G. (1979). Attributional confidence and uncertainty in initial interaction. *Human Communication Research*, 5, 147–157. doi:10.1111/j.1468-2958.1979.tb00630.x

Fiedler, K., Semin, G. R., Finkenauer, C., & Berkel, I. (1995). Actor-observer bias in close relationships: The role of self-knowledge and self-related language. *Personality and Social Psychology Bulletin*, 21, 525–538. doi:10.1177/0146167295215010

Gelfand, M. J., Kuhn, K. M., & Radhakrishnan, P. (1996). The effect of value differences on social interaction processes and job outcomes: Implications for managing diversity. In M. R. N., M. W. Hughes-James, & S. E. Jackson (Eds.), *Selected research on work team diversity*. Washington, DC: American Psychological Association.

George, J. M. (1992). Extrinsic and intrinsic origins of perceived social loafing in organizations. *The Academy of Management Journal*, 35, 191–202.

- Gockel, C., Kerr, N. L., Seok, D.-H., & Harris, D. W. (2008). Indispensability and group identification as sources of task motivation. *Journal of Experimental Social Psychology, 44*, 1316–1321. doi:10.1016/j.jesp.2008.03.011
- Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4*, 26–42. doi:10.1037//1040-3590.4.1.26
- Goodman, P. S., & Leyden, D. P. (1991). Familiarity and group productivity. *Journal of Applied Psychology, 76*, 578–586. doi:10.1037/0021-9010.76.4.578
- Green, S. G., & Mitchell, T. R. (1979). Attributional processes of leaders in leader-Member interactions. *Organizational Behavior and Human Performance, 23*, 429–458. doi:10.1016/0030-5073(79)90008-4
- Gupta, N. (2012). Team responses to noncontributing members: The effects of attribution and knowledge overlap. *Group Dynamics: Theory, Research, and Practice, 16*, 172–188. doi:10.1037/a0029297
- Hackman, J. R. (1993). Teams, leaders, and organizations: New directions for crew-oriented flight training. In E. L. Weiner, B. G. Kanki, & R. L. Helmreich (Eds.), *Cockpit Resource Management* (pp. 47–69). Orlando, FL: Academic Press.
- Hareli, S. (2005). Accounting for one's behavior - What really determines its effectiveness? Its type or its content? *Journal for the Theory of Social Behaviour, 35*, 359–372. doi:10.1111/j.1468-5914.2005.281\_1.x
- Harvey, J. H., Yarkin, K. L., Lightner, J. M., & Town, J. P. (1980). Unsolicited interpretation and recall of interpersonal events. *Journal of Personality and*

*Social Psychology*, 38, 551–568. doi:10.1037/0022-3514.38.4.551

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: The Guilford Press.

Heider, F. (1958). *The psychology of interpersonal relations*. doi:10.1037/10628-000

Hertel, G., Niemeyer, G., & Clauss, A. (2008). Social indispensability or social comparison : The why and when of motivation gains of inferior group members 1. *Journal of Applied Psychology*, 38, 1329–1363.

Hüffmeier, J., & Hertel, G. (2011). Many cheers make light the work: how social support triggers process gains in teams. *Journal of Managerial Psychology*, 26, 185–204. doi:10.1108/02683941111112631

Jackson, C. L., & LePine, J. A. (2003). Peer responses to a team's weakest link: A test and extension of LePine and Van Dyne's model. *Journal of Applied Psychology*, 88, 459–475. doi:10.1037/0021-9010.88.3.459

Jassawalla, A., Sashittal, H., & Malshe, A. (2009). Students' perceptions of social loafing : Its antecedents and consequences in undergraduate business classroom teams. *Academy of Management Journal*, 8, 42–54.  
doi:10.5465/AMLE.2009.37012178

Jones, E. E., & Harris, V. A. (1967). The attribution of attitudes. *Journal of Experimental Social Psychology*, 3, 1–24. doi:10.1016/0022-1031(67)90034-0

Juvonen, J., & Weiner, B. (1993). An attributional analysis of students' interactions: The social consequences of perceived responsibility. *Educational Psychology*

*Review*, 5, 325–345.

Kahneman, D. (2011). *Thinking fast and slow*. New York, NY: Farrar, Straus and Giroux.

Karau, S., & Williams, K. D. (1993). Social loafing : A meta-analytic review and theoretical integration. *Journal of Personality & Social Psychology*, 65, 681–706.

Kelley, H. H. (1967). Attribution theory in social psychology. In D. Levine (Ed.), *Nebraska Symposium On Motivation*. Lincoln, NE: University of Nebraska Press.

Kelley, H. H. (1972). Attribution in social interaction. In E. Jones, D. Kanouse, H. Kelley, R. Nisbett, S. Valins, & B. Weiner (Eds.), *Attribution: Perceiving the causes of behavior*. Morristown, N. J.: General Learning Press.

Kelley, H. H. (1973). The process of causal attribution. *American Psychologist*, 28, 107–128. doi:10.1037/h0034225

Kerr, N. L. (1983). Motivation losses in small groups: A social dilemma analysis. *Personality and Social Psychology*, 45, 819–828.

Kerr, N. L., & Bruun, S. (1983). The dispensability of member effort and group motivation losses: Free rider effects. *Journal of Personality and Social Psychology*, 44, 78–94.

Kerr, N. L., & Tindale, R. S. (2004). Group performance and decision making. *Annual Review of Psychology*, 55, 623–55.

doi:10.1146/annurev.psych.55.090902.142009

Kruglanski, A. W., Webster, D. M., & Klem, A. (1993). Motivated resistance and

openness to persuasion in the presence or absence of prior information. *Journal of Personality and Social Psychology*, 65, 861–76. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/8246114>

Latané, B., Williams, K., & Harkins, S. (1979). Many hands make light the work: The causes and consequences of social loafing. *Journal of Personality and Social Psychology*, 37, 822–832.

LePine, J. A., & van Dyne, L. (2001). Peer responses to low performers: An attributional model of helping in the context of groups. *Academy of Management*, 26, 67–84. doi:10.5465/AMR.2001.4011953

Leppink, J., Paas, F., Van der Vleuten, C. P. M., Van Gog, T., & Van Merriënboer, J. J. G. (2013). Development of an instrument for measuring different types of cognitive load. *Behavior Research Methods*, 45, 1058–1072. doi:10.3758/s13428-013-0334-1

Liden, R. C., Wayne, S. J., Judge, T. a., Sparrowe, R. T., Kraimer, M. L., & Franz, T. M. (1999). Management of poor performance: A comparison of manager, group member, and group disciplinary decisions. *Journal of Applied Psychology*, 84, 835–850. doi:10.1037/0021-9010.84.6.835

McArthur, L. A. (1972). The how and what of why: Some determinants and consequences of causal attribution. *Journal of Personality and Social Psychology*, 22, 171–193. doi:10.1108/eb016596

McAuley, E., Duncan, T. E., & Russel, D. W. (1992). Measuring causal attributions: The revised causal dimension scale (CDSII). *Personality and Social Psychology*

*Bulletin*, 18, 566–573. doi:10.1177/0146167292185006

McGrath, J. E. (1984). *Groups: Interaction and performance*. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Meyer, J. P., & Mulherin, A. (1980). From attribution to helping: An analysis of the mediating effects of affect and expectancy. *Journal of Personality and Social Psychology*, 39, 201–210. doi:10.1037/0022-3514.39.2.201

Mitchell, T. R., & Wood, R. E. (1980). Supervisor's responses to subordinate poor performance: A test of an attributional model. *Organizational Behavior and Human Performance*, 25, 123–138. doi:10.1016/0030-5073(80)90029-X

Monson, T. C., Keel, R., Stephens, D., & Genung, V. (1982). Trait attributions: Relative validity, covariation with behavior, and prospect of future interaction. *Journal of Personality and Social Psychology*, 42, 1014–1024. doi:10.1037//0022-3514.42.6.1014

Moran, J. M., Jolly, E., & Mitchell, J. P. (2014). Spontaneous mentalizing predicts the fundamental attribution error. *Journal of Cognitive Neuroscience*, 26, 569–576.

Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 123–205). New York, NY: Academic Press.

Pfaff, E., & Huddleston, P. (2003). Does it matter if I hate teamwork? What impacts student attitudes toward teamwork. *Journal of Marketing Education*, 25, 37–45. doi:10.1177/0273475302250571

- Prager, I. G., & Cutler, B. L. (1990). Attributing traits to oneself and to others: The role of acquaintance level. *Personality and Social Psychology Bulletin*, *16*, 309–319.
- Reisenzein, R. (1986). A structural equation analysis of Weiner's attribution-affect model of helping behavior. *Journal of Personality and Social Psychology*, *50*, 1123–1133. doi:10.1037/0022-3514.50.6.1123
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 173–220). New York, NY: Academic Press.
- Russell, D. (1982). The causal dimension scale: A measure of how individuals perceive causes. *Journal of Personality & Social Psychology*, *42*, 1137–1145.
- Santarra, T. (2016). Adapting Plans through Communication with Unknown Teammates ( Doctoral Consortium ). *Aamas 2016*, 1526–1527.
- Schlenker, B. R., Pontari, B. A., Christopher, A. N., Carver, G. W., & Smith, H. (2001). Excuses and character : Personal and social implications of excuses, *5*, 15–32.
- Shaver, K. G. (1975). *An introduction to attribution processes*. Cambridge, MA: Winthrop Publishers.
- Shaw, J. C., Wild, E., & Colquitt, J. A. (2003). To justify or excuse?: A meta-analytic review of the effects of explanations. *The Journal of Applied Psychology*, *88*, 444–458. doi:10.1037/0021-9010.88.3.444

- Steiner, I. D. (1972). *Group process and productivity*. New York, NY: Academic.
- Stone, P., Kaminka, G. a, & Rosenschein, J. S. (2010). Ad hoc autonomous agent teams : Collaboration without pre-coordination. *Twenty-Fourth AAAI Conference on Artificial Intelligence*, (July), 1504–1509.
- Struthers, C. W., Weiner, B., & Allred, K. (1998). Effects of causal attributions on personnel decisions: A social motivation perspective. *Basic and Applied Social Psychology*, 20, 155–166. doi:10.1207/s15324834basp2002\_7
- Taggar, S., & Neubert, M. (2004). The impact of poor performers on team outcomes: An empirical examination of attribution theory. *Personnel Psychology*, 57, 935–968. doi:10.1111/j.1744-6570.2004.00011.x
- Taggar, S., & Neubert, M. J. (2008). A cognitive (attributions)-emotion model of observer reactions to free-riding poor performers. *Journal of Business and Psychology*, 22, 167–177. doi:10.1007/s
- Tata, J. (2002). The influence of accounts on perceived social loafing in work teams. *International Journal of Conflict Management*, 13, 292–308. doi:10.1108/eb022878
- Thibaut, J., & Kelley, H. (1959). *The social psychology of groups*. New York, NY: Wiley.
- Turner, L. H., & West, R. (2011). Theories of relational communication. In *Making connections: Reading in relational communication* (pp. 30–45). New York, NY: Oxford University Press.

- Valle, V. A., & Frizez, I. H. (1976). Stability of causal attributions as a mediator in changing expectations for success. *Journal of Personality and Social Psychology*, *33*, 579–587. doi:10.1037/0022-3514.33.5.579
- Weber, B., & Hertel, G. (2007). Motivation gains of inferior group members: A meta-analytical review. *Journal of Personality and Social Psychology*, *93*, 973–93. doi:10.1037/0022-3514.93.6.973
- Wegge, J., & Haslam, S. A. (2005). Improving work motivation and performance in brainstorming groups: The effects of three group goal-setting strategies. *European Journal of Work and Organizational Psychology*, *14*, 400–430. doi:10.1080/13594320500349961
- Weiner, B. (1980a). A cognitive (attribution)-emotion-action model of motivated behavior: An analysis of judgments of help-giving. *Journal of Personality and Social Psychology*, *39*, 186–200. doi:10.1037/0022-3514.39.2.186
- Weiner, B. (1980b). May I borrow your class notes? An attributional analysis of judgments of help giving in an achievement-related context. *Journal of Educational Psychology*, *72*, 676–681. doi:10.1037/0022-0663.72.5.676
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, *4*, 548–573. doi:10.1037/0033-295X.92.4.548
- Weiner, B. (1986). *An attributional theory of motivation and emotion*. New York, NY: Springer-Verlag.
- Weiner, B. (1995). Inferences of responsibility and social motivation. *Advances in*

- Experimental Social Psychology*, 27, 1–47. doi:10.1016/S0065-2601(08)60402-5
- Weiner, B., Amrikhan, J., Folkes, V. S., & Verette, J. (1987). An attributional analysis of excuse giving: Studies of naive theory of emotion. *Journal of Personality & Social Psychology*, 52, 316–324.
- Wheeler, B. C., & Mennecke, B. E. (1992). *The school of business policy task manual: Working paper # 92-524*. Indianapolis: Bloomington.
- Williams, K., Karau, S., & Bourgeois, M. (1993). Working on collective tasks: Social loafing and social compensation. In M. Hogg & D. Abrrams (Eds.), *Group motivation: Social Psychological perspectives* (pp. 130–148). Hertfordshire, UK: Harvester Wheatsheaf.
- Williams, K., & Karau, S. J. (1991). Social loafing and social compensation: the effects of expectations of co-worker performance. *Journal of Personality and Social Psychology*, 61, 570–81. doi:10.1037/0022-3514.61.4.570
- Wood, R. E., & Mitchell, T. R. (1981). Manager behavior in a social context: the impact of impression management on attributions and disciplinary actions. *Organizational Behavior and Human Performance*, 28, 356–378.  
doi:10.1016/0030-5073(81)90004-0
- Yarkin-Levin, K. (1983). Anticipated interaction, attribution, and social interaction. *Social Psychology Quarterly*, 46, 302–311.