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Differential Attributions of the Causes of Subordinate Success and Failure by Aggressive and Non-Aggressive Individuals

Mark Connor Bowler
University of Tennessee - Knoxville

To the Graduate Council:

I am submitting herewith a dissertation written by Mark Connor Bowler entitled "Differential Attributions of the Causes of Subordinate Success and Failure by Aggressive and Non-Aggressive Individuals." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Industrial and Organizational Psychology.

David J. Woehr, Major Professor

We have read this dissertation and recommend its acceptance:

Virginia W. Kupritz, Michael D. McIntyre, Michael C. Rush, Mary Sue Younger

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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DIFFERENTIAL ATTRIBUTIONS OF THE CAUSES OF SUBORDINATE SUCCESS AND FAILURE BY AGGRESSIVE AND NON-AGGRESSIVE INDIVIDUALS

A Dissertation
Presented for the
Doctor of Philosophy
Degree
University of Tennessee, Knoxville

Mark Connor Bowler
May 2006

DEDICATION

For my wife, Jennifer.

ACKNOWLEDGMENTS

I would like to acknowledge several individuals who have contributed notably to my graduate training and development. First and foremost, I wish to thank Dave Woehr for his outstanding mentorship. I have learned so much from you, and I am grateful for all of the insightful feedback and suggestions you have provided over the years. Thank you for challenging me intellectually and supporting me academically. I could not have asked for a better mentor during my graduate school career

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ABSTRACT

This dissertation examined the differential causal attributions of non-aggressive and aggressive individuals responding to incidents of subordinate success and failure. Participants (N = 407) were presented with 16 vignettes (eight describing subordinate success and eight describing subordinate failure) that utilized unique combinations of consensus, distinctiveness, and consistency information. Participants made attributions regarding the cause of the subordinate's behavior (i.e., person, task, circumstances, or any combination of the three) and indicated their preferred behavioral response (i.e., praise/reward, reprimand/punish, coach/train, redesign the task, or do nothing). When responding to incidents of subordinate success, the causal attributions of aggressive individuals were similar to those of non-aggressive individuals. However, when responding to incidents of subordinate failure, in an apparent attempt to make the subordinate more worthy of hostility, the causal attributions of aggressive individuals deviated from those of non-aggressive individuals for two information patterns (i.e., low consensus, high distinctiveness, and high consistency; low consensus, low distinctiveness, and low consistency). Moreover, for aggressive individuals, the processing of information relating to subordinate failure was considerably less complex than the processing of information relating to subordinate success. Implications, potential limitations, and directions for future research are discussed.

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CHAPTER 1

INTRODUCTION

When responding to subordinate performance, supervisors must first determine what behavior is most appropriate. To do so accurately, they must have a clear understanding of what caused the subordinate's performance. Unfortunately, the nature of organizational work typically prevents supervisors from being able to directly observe most of their subordinates' performance. Thus, supervisors must often infer, via the process of induction, the cause of a subordinate's performance based upon any available information (Ashkanasy, 1989; Green & Mitchell, 1979).

Induction is the cognitive process by which a general conclusion is drawn from a set of specific premises (Mill, 1973; Mortimer, Graig, & Cohn, 1988). Unlike deduction, in which general premises logically guarantee a specific conclusion, the specific premises of inductive reasoning merely provide probabilistic support for a conclusion; they cannot guarantee it (Copi, 1982). Thus, in an attempt to understand and explain the causes of subordinate behavior, organizational leaders must often draw upon specific observable information, recognize patterns amongst these observations, and use these patterns to formulate a general conclusion regarding the cause of the subordinate's performance (Green & Mitchell, 1979; Kelley, 1973). Despite the fact that these conclusions only produce probabilistic support, given specific information patterns, individuals generally tend to form similar causal attributions for particular behaviors (cf., Hilton & Jaspars, 1987; Jaspars, 1983; McArthur, 1972; Mitchell & Wood, 1980; Orvis, Cunningham, & Kelley, 1975). This consistency in leaders' causal attributions of subordinate performance (and the stability of subordinates' reciprocal attributions) engenders greater trust and understanding in the performance evaluation process (Huber, Podsakoff, & Todor, 1986).

Aggression, and its impact upon the processing of attribution information, is a possible threat to this stability. Recent research into the nature of human aggression has identified a set of cognitive mechanisms that aggressive individuals utilize to enhance the rational appeal of aggressive behavior (James, 1998; James et al., 2005). These justification mechanisms (JMs) bias the rational thought processes of aggressive individuals in an attempt to make the desired target of aggression appear more deserving of hostility. Thus, when frustrated, threatened, or otherwise provoked, the rational thought processes of aggressive individuals are substantially different from those of non-aggressive individuals (James et al., 2004). The purpose of this study is to examine the extent to which the JMs for aggression impact the processing of traditional attribution information. Specifically, it compares the attributional patterns of aggressive and non-aggressive individuals when responding to instances of subordinate success and failure. Moreover, it looks at the complexity of the processing of attribution information and the intended behaviors that follow.

Causal Attribution

Research on causal attribution is typically grounded in the covariation principles introduced by Kelley (1973). When inferring the cause of a subordinate's performance on a particular task, three types of information, consensus (Cs), distinctiveness (Ds), and consistency (Cy), are used to infer whether the person (P), the task (T), the circumstances (C), or some interaction of these factors (PT, PC, TC, or PTC) produced the given outcome (e.g., success or failure). *Consensus* information relates the subordinate's performance to the performance of others working on the same task. High consensus indicates that the subordinate's performance was similar to the performance of others, whereas low consensus indicates that the subordinate's performance was dissimilar to the performance of others. *Distinctiveness* information relates the subordinate's performance to his or her performance on similar tasks. High distinctiveness indicates that the subordinate's performance was dissimilar to his or her performance on other tasks, whereas low distinctiveness indicates that the subordinate's performance was similar to his or her performance on other tasks. *Consistency* information relates the subordinate's performance to his or her performance on the same task in the past. High consistency indicates that the subordinate's current performance on the given task is similar to his or her past performance on the same task, whereas low consistency indicates that the subordinate's current performance on the given task is dissimilar to his or her past performance on the same task. The model proposed by Kelley, often referred to as the ANOVA model, suggests that individuals examine the covariation of these three information sources (e.g., low Cs, low Ds, and high Cy) and form subsequent attributions on the basis of these patterns (e.g., a P attribution).

The inductive logic model (ILM) of causal attributions (Jaspars, Hewstone, & Fincham, 1983) is a refinement of Kelley's (1973) ANOVA model. Like the Kelley model, the ILM proposes that the process of causal attribution is a function of the processing of consensus, distinctiveness, and consistency information. Moreover, as with the Kelley model, the ILM focuses upon causal attributions ascribed to the person, the task, the circumstances, or some interaction of the three. However, unlike the

Kelley model which suggests that individuals analyze the covariation of the three information sources, the ILM proposes that the information sources are coded to indicate the necessary presence of the person, task, and circumstances for the production of the behavioral outcome. Low consensus indicates that the person is necessary to produce the given outcome, high distinctiveness indicates that the task is necessary to produce the given outcome, and low consistency indicates that the circumstances are necessary to produce the given outcome. Thus, for example, a combination of high consensus, high distinctiveness, and high consistency (HHH) information should theoretically lead to a task (T) attribution. Similarly, a combination of low consensus, low distinctiveness, and low consistency (LLL) information should lead to a person x task combination (PT) attribution.

The specific manner in which consensus, distinctiveness, and consistency information relate to causal attributions allows for the ILM to make specific predictions regarding which attributions will be made given specific information patterns. In the low consensus, low distinctiveness, high consistency (LLH) information pattern, the ILM predicts that a P attribution will be made; for the HHH information pattern a T attribution is predicted; for the HLL information pattern, a C attribution is predicted; for the LHH information pattern, a PT attribution is predicted; for the LLL information pattern, a PC attribution is predicted; for the HHL information pattern, a TC attribution is predicted; for the LHL information pattern, a PTC attribution is predicted; and no prediction is made for the HLH information pattern due to the fact that none of the available information specifies a cause for behavior (Jaspars, 1983). Research evidence has generally provided support for the predictions of the ILM (cf., Hewstone & Jaspars, 1987; Jaspars, 1983). Moreover, a specific comparison of the two models has demonstrated the superiority of the ILM to the ANOVA model with regard to predictive ability (Hilton & Jaspars, 1987).

Although the predictions of the ILM are generally supported, the reasoning theorized to drive these predictions is not. If, as the ILM prescribes, consensus indicates the necessity the person, distinctiveness indicates the necessity of the task, and consistency indicates the necessity of the circumstances, then the data could simply be explained by modeling an interaction between consensus and person attributions (CsP), distinctiveness and task attributions (DsT), and consistency and circumstance attributions (CyC). Thus, together the terms would be modeled as follows: [1]

[CsP][DsT][CyC] (1)

That is, consensus information (and only consensus information) influences the occurrence of a person attribution, distinctiveness information (and only distinctiveness information) influences the occurrence of a task attribution, and consistency information (and only consistency information) influences the occurrence of a circumstance attribution. However, Iacobucci and McGill (1990) demonstrated that this simple model is insufficient for describing the processing of attribution information. In their reanalysis of the Hilton and Jaspars (1987) data, they concluded that causal attributions are best represented by a much more complex model:

[CsDsCyP][CsCyPC][DsCyPC][DsCyTC][CsT] (2)

They obtained similar results in their reanalysis of the Hewstone and Jaspars (1987)

---

[1] The three-way interaction between the factors that serve as predictor variables must be included in all logistic regression models (Fienberg, 1977). For clarity, it is not included in the following model.

data:

[CsDsCyP][CsDsPT][DsCyTC] (3)

As well as in their reanalysis of the Jaspars (1983) data:

[CsCyTC][CsCyPC][DsPC] (4)

This highlights an interesting inconsistency. Despite the relative stability of the predictions of the ILM model, the theoretical reasoning underlying these predictions is unclear. Nevertheless, what is clear is that the typical processing of attribution information is more complex than the explanation provided by the ILM.

Leader Attributions

The leader attribution model proposed by Green and Mitchell (1979) incorporates the basic principles of the Kelley (1973) ANOVA model (see Figure 1-1). Initially, the leader is presented with an incident of subordinate behavior (i.e., good or bad performance). From this, the leader forms an attribution regarding the subordinate's performance (i.e., he or she infers what caused the performance). Finally, the leader must decide how to respond to the subordinate's behavior based upon the causal attribution that was formed. Additional factors moderate the linkages between these three components. The first linkage (between the subordinate's behavior and the leader's causal attribution) is moderated by the traditional information patterns of consensus, distinctiveness, and consistency (proposed by Kelley, 1973). The second linkage (between the leader's causal attribution and his or her response) is moderated by the perceived impact of the subordinate's performance. In addition, bias stemming from sources such as impression management, dynamics of the leader-subordinate relationship, and self-handicapping are theorized to moderate both of these linkages.

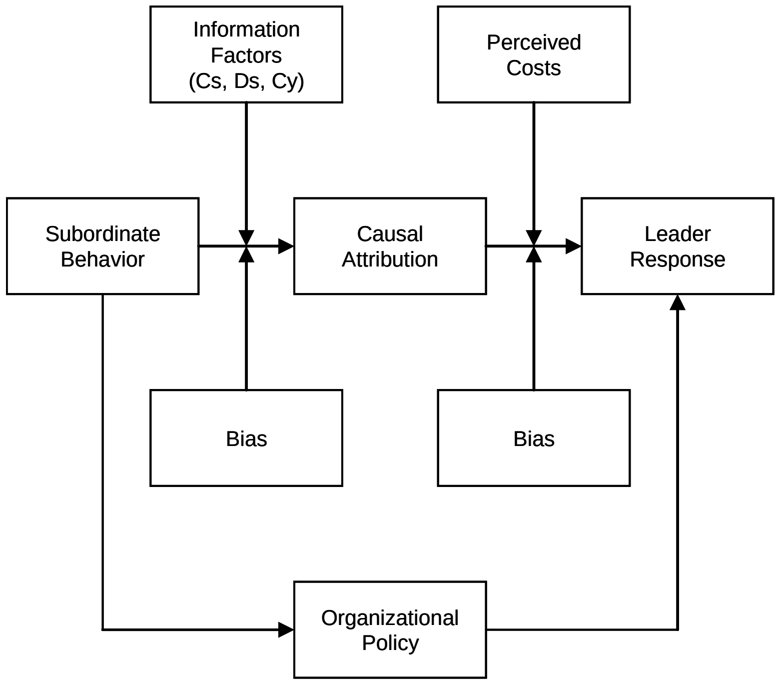

Figure 1-1. The Leader Attribution Model (Green & Mitchell, 1979)

Overall, empirical evidence has supported the primary linkages of the Green and Mitchell model (Ashkanasy, 1989; Hargrett, 1981; Mitchell & Wood, 1980). Additional studies have provided specific support for the first linkage (Mitchell, Green, & Wood, 1981) as well as the second linkage (Dobbins, Pence, Orban, & Sgro, 1983; Green & Liden, 1980; Knowlton & Mitchell, 1980). Moreover, empirical evidence has provided support for the moderating influence of the supervisor's perceived cost of the subordinate's behavior (Mitchell & Kalb, 1981) as well as numerous other biasing factors such as gender (Dobbins, 1985), impression management (Wood & Mitchell, 1981), interpersonal interactions (Gioia & Sims, 1986), leader experience (Mitchell & Kalb, 1982), leader-subordinate relationship (Fedor & Rowland, 1989; Heneman, Greenberger, & Anonyuo, 1989; Ilgen, Mitchell, & Fredrickson, 1981), subordinate likeableness (Dobbins & Russell, 1986), and subordinate self-handicapping (Crant & Bateman, 1993).

Although there has been a substantial amount of research supporting the Green and Mitchell (1979) model, two areas have received little empirical attention. First, the information factors from which leaders infer causality have been largely ignored. Leader attribution research utilizing the Green and Mitchell model typically focuses upon the specific information patterns believed to engender strong internal (i.e., P) or external (i.e., T or C) attributions. For example, in an examination of leader responses to poor performance, Mitchell and Wood (1980) only used two of the eight possible information patterns to engender either a strong internal attribution (i.e., a P attribution via low Cs, low Ds, and high Cy) or a strong external attribution (i.e., a TC attribution via high Cs, high Ds, and low Cy). Thus, while research has clarified our understanding of leader responses following unambiguous internal and external attributions, there is little to no understanding of leader responses following mixed attributions (i.e., PT, PC, TC, or PTC).

Second, while a substantial amount of research has focused upon numerous sources of bias in the Green and Mitchell model, biases stemming from particular leader traits (e.g., personality) have not been examined. Although there is little research on this topic, what does exist suggests that particular individual differences can bias the inductive reasoning that occurs when making causal attributions. For example, in an examination of intra-individual attributional processes, Tukey and Borgida (1983) concluded that individual differences had a greater influence upon causal attributions than the presented attribution information. More specific studies have highlighted the relationship between personality characteristics such as self-consciousness and self-esteem and biases in causal attribution (cf., Hirschy & Morris, 2002; Shaherwalla & Kanekar, 1991). Similarly, research on aggression has highlighted the propensity for aggressive individuals to process social cues in a manner that deviates from traditional patterns (James, 1998; James & McIntyre, 2000; James et al., 2005; Zelli, Dodge, Lochman, Laird, & Conduct Problems Prevention Research Group [CPPRG], 1999). Thus, although largely ignored, recent empirical evidence suggests that personality traits, and aggression in particular, can significantly bias causal attributions.

Aggression

Aggressive individuals are unique in that they are motivated by the desire to inflict harm upon others (Baron & Richardson, 1994). However, like most others, aggressive individuals are also motivated by the desire to view themselves in a favorable light (James et al., 2004). The presence of these two conflicting motives engenders an internal conflict within the aggressive individual. In an effort to reduce this conflict, aggressive individuals utilize a set of implicit cognitive biases, referred to as justification mechanisms (JMs), which help to rationalize aggressive behavior by making the desired target of aggression appear more worthy of hostility (James, 1998). By making aggression appear to be the most logical course of action (i.e., the course of action that most others would take) the dissonance between the conflicting motives of aggression and favorable self-regard is mitigated, thus facilitating aggressive behavior. Five cognitive biases have been identified as JMs for aggression (James et al., 2005). Each of these JMs operates implicitly without any conscious awareness, yet each one contributes to the explicit rationalization of aggressive behavior.

Hostile Attribution Bias. The hostile attribution bias (HAB) is based upon the implicit assumption that other people are motivated by a desire to harm others (James et al., 2005). This cognitive bias allows aggressive individuals to conclude that the actions of others are malevolent in nature and thus deserving of retaliation. More specifically, "even benign or friendly acts may be credited to hidden, hostile agendas designed to inflict harm" (James et al., 2005, p. 7). Thus, by attributing malevolent intent to the behaviors of others, aggressive individuals are able to rationalize their own aggressive behavior as an act of self-defense.

Potency Bias. The potency bias (PB) is based upon the implicit assumption that social interactions are actually contests by which one establishes dominance and respect (James, 1998). This cognitive bias allows aggressive individuals to conclude that aggression is actually a method by which one rightfully demonstrates supremacy. In contrast, a lack of aggression is concluded to be a demonstration of inferiority. By framing social interactions in this manner, aggressive individuals rationalize aggressive behavior as an "act of strength or bravery that gains respect from others" and the decision not to act aggressively "is to invite powerful others to take advantage of you" (James et al., 2005, p. 74).

Retribution Bias. The retribution bias (RB) is based upon the implicit assumption that retaliation is more important than maintaining social relationships (James, 1998). This cognitive bias allows aggressive individuals to conclude that retaliation is superior to reconciliation. Thus, aggressive behavior is rationalized as an acceptable method of restoring respect and authority. Moreover, retaliation is considered to be more reasonable than forgiveness. As described by James et al. (2005), "this bias often underlies justifications for aggression engendered by wounded pride, challenged self-esteem, and perceived disrespect" (p. 7).

Social Discounting Bias. The social discounting bias (SDB) is based upon the implicit assumption that social customs are restrictive to free will and the satisfaction of needs (James, 1998). This cognitive bias allows aggressive individuals to forego traditional ideals and social standards in favor of norm-breaking aggressive behavior. Often, aggressive individuals focus their observations upon the more cynical and critical aspects of a given situation. Moreover, "reasoning [is] further [evidenced by] a lack of sensitivity, empathy, and concern for social customs, often accompanied by the absence of rational prohibitions against behaving in socially unorthodox ways" (James et al., 2005, p. 7). By framing social customs as restrictive and unnecessary, aggressive individuals can rationalize hostile behavior as providing an acceptable avenue of self expression.

Victimization by Powerful Others Bias. The victimization by powerful others bias (VPOB) is based upon the assumption that those with power seek to oppress those without power (James, 1998). This cognitive bias allows aggressive individuals to regard themselves as victims of those who they perceive as more powerful. Moreover, "framing of events, hypotheses about cause and effect, and confirmatory searches for evidence both engender and reinforce inferences that people are being victimized by powerful others" (James et al., 2005, p. 7). By framing themselves as victims of oppression, aggressive individuals are able to rationalize hostile behaviors as acceptable and necessary responses.

Aggression and Attributions

The goal of the present study is threefold. First, the present study seeks to compare the attributional response patterns of aggressive and non-aggressive individuals. By biasing inductive processes, the JMs for aggression help to shape the reasoning of aggressive individuals by enhancing the rational appeal of aggressive behavior (James, 1988; James et al., 2005). However, aggressive individuals do not continually engage in outwardly hostile behavior. Typically, a triggering event or behavior, although often subtle, is necessary to incite aggressive behavior (e.g., Miller, Pedersen, Earlywine, & Pollock, 2003; Tremblay & Belchevski, 2004; Vasquez, Denson, Pedersen, Stenstrom, & Miller, 2005). Triggers such as threats to self-image (Fein & Spencer, 1997) and threatened egoism (Bushman & Baumeister, 1998) have been shown to be especially prone to evoke aggressive behavior. Thus, when evaluating subordinate success (performance that should not be viewed as threatening to the image and/or standing of a supervisor), the attributions of both non-aggressive and aggressive individuals should be consistent with those predicted by the ILM.

Hypothesis 1: When assessing the cause of successful subordinate performance, non-aggressive individuals will form attributions that follow the predictions of the ILM.

Hypothesis 2: When assessing the cause of successful subordinate performance, aggressive individuals will form attributions that follow the predictions of the ILM.

Similarly, when evaluating subordinate failure, the attributions of non-aggressive individuals should be consistent with those predicted by the ILM.

Hypothesis 3: When assessing the cause of subordinate failure, non-aggressive individuals will form attributions that follow the predictions of the ILM.

However, when aggressive individuals evaluate subordinate failure (performance that could be viewed as threatening to the image and standing of a supervisor), their attributions should differ substantially from the predictions of the ILM. Specifically, aggressive individuals should make substantially more P attributions in an attempt to make the subordinate appear more worthy of aggression.

Hypothesis 4: When assessing the cause of subordinate failure, aggressive individuals will form P attributions regardless of the presented information.

A second aim of the present study is to examine the extent to which the cognitive biases for aggression impact the processing of attribution information. Iacobucci and McGill (1990) noted that although the predictions of the ILM were largely accurate, the relationship between relevant attribution information (Cs, Ds, and

Cy) and subsequent attributions (P, T, C, PT, PC, and PTC) was far more complex. Overall, Iacobucci and McGill concluded that a complex model that included polynomial interactions (i.e., [CsDsCyP][CsCyPC][DsCyPC][DsCyTC][CsT]) provided the best fit for previously published attribution data (i.e., Hilton & Jaspars, 1987). Thus, it is expected that non-aggressive individuals (those who do not utilize the JMs for aggression in their cognitive processing) will demonstrate a similarly complex process of attribution information in their evaluations of subordinate success and subordinate failure. That is, for non-aggressive individuals, there should be no substantial difference in the complexity of the cognitive processing of attribution information between their evaluations of subordinate success and their evaluations of subordinate failure.

Hypothesis 5: For non-aggressive individuals, there will be no substantial difference in the number of significant terms between their evaluations of subordinate success and their evaluations of subordinate failure.

In contrast, when feeling threatened, aggressive individuals rely (at least in part) on the JMs for aggression. These JMs alter the cognitive processing of aggressive individuals. Essentially, they supplant traditional attribution information in an attempt to make the target of aggression more deserving of hostility. Thus, when responding to instances of subordinate failure, aggressive individuals should display a substantially less complex level of attribution information processing than they utilize when evaluating subordinate success.

Hypothesis 6: For aggressive individuals, there will be fewer significant terms used when evaluating subordinate failure relative to evaluations of subordinate *success.*

Finally, the present study seeks to compare the intended behavioral responses of aggressive and non-aggressive individuals following attributions of success and failure. When determining what course of action to take in response to successful subordinate performance, both non-aggressive and aggressive individuals should advocate non-punitive responses (i.e., responses that are not hostile in nature such as praise/reward).

Hypothesis 7: When responding to incidents of subordinate success, non-aggressive individuals will advocate non-punitive behavioral responses.

Hypothesis 8: When responding to incidents of subordinate success, aggressive individuals will advocate non-punitive behavioral responses.

Similarly, when determining what course of action to take in response to subordinate failure, non-aggressive individuals should advocate non-punitive responses.

Hypothesis 9: When responding to incidents of subordinate failure, non-aggressive individuals will advocate non-punitive behavioral responses.

However, when aggressive individuals are determining what action to take in response to subordinate failure, they should advocate aggressing towards the subordinate.

Hypothesis 10: When responding to incidents of subordinate failure, aggressive individuals will advocate punitive behavioral responses.

In sum, when evaluating subordinate success, it is expected that the attributions and subsequent behavioral responses of aggressive individuals will be similar to those of non-aggressive individuals. Alternately, when evaluating subordinate failure, it is expected that the attributions and subsequent behavioral responses of aggressive individuals will be substantially different than those of non-aggressive individuals.

Aggressive individuals should disregard the provided attribution information and advocate a person attribution and subsequent punishment. Moreover, when compared to their evaluations of successful subordinate performance, aggressive individuals should demonstrate a substantial decrease in the complexity of their cognitive processing of attribution information relating to subordinate failure.

CHAPTER 2

METHODOLOGY

Sample

The sample consisted of 407 participants who were recruited from an introductory management course at a large public university. Of those reporting demographic information[2], ages ranged from 19 to 39 years (M = 21.27, SD = 2.30) with 54% being male and 91% being Caucasian. In exchange for their participation, students received extra credit towards their course grade.

Measures

Attributions. A 16-item attribution measure was specifically developed for use in this study. Each of the 16 items reported the occurrence of a subordinate's behavior followed by three statements representing one of the eight possible combinations of consensus, distinctiveness, and consistency information. Eight items described the occurrence of a successful work-related behavior and eight of the items described the occurrence of an unsuccessful work-related behavior. A subject matter expert (SME) assisted in the development of each of the 16 subordinate behaviors that were modeled after typical behaviors performed by front-line workers in an automotive assembly plant. Moreover, in an attempt to control for an increase in person attributions that can occur when the outcomes of behavior have severe consequences (Mitchell & Wood, 1980), the SME provided judgments regarding the severity of the outcomes of the work behaviors and those with comparable severity were selected for use in this study.

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[2] 95% of participants provided their demographic information.

Items were constructed using the following format. For the success condition (e.g., While working on the assembly line today, John installed door latches correctly.), consensus information was presented as follows:

(1) Almost all of John's coworkers installed door latches correctly. (High consensus)

(2) Almost none of John's coworkers installed door latches correctly. (Low consensus)

Distinctiveness information was presented as follows:

(1) However, John installed trunk latches incorrectly. (High distinctiveness)

(2) John also installed trunk latches correctly. (Low distinctiveness)

Consistency information was presented as follows:

(1) In the past, John has installed door latches correctly. (High consistency)

(2) In the past, John has installed door latches incorrectly. (Low consistency)

For the failure condition (e.g., John installed door latches incorrectly), consensus information was presented as follows:

(1) Almost all of John's coworkers installed door latches incorrectly. (High consensus)

(2) Almost none of John's coworkers installed door latches incorrectly. (Low consensus)

Distinctiveness information was presented as follows:

(1) However, John installed trunk latches correctly. (High distinctiveness)

(2) John also installed trunk latches incorrectly. (Low distinctiveness)

Consistency information was presented as follows:

(1) In the past, John has installed door latches incorrectly. (High consistency)

(2) In the past, John has installed door latches correctly. (Low consistency)

Following the presentation of the information pattern, respondents were asked to indicate what they believed to be the cause of the subordinate's behavior via the following question:

Given this information, what caused John to correctly install the door latches?

As suggested by Jaspars (1983), all seven of the possible causal explanations for the occurrence of the behavior were presented: (1) the person, (2) the task, (3) the circumstances, (4) the person and the task, (5) the person and the circumstances, (6) the task and the circumstances, or (7) the person, the task, and the circumstances. Moreover, each of the causal explanations included information specific to the item. Thus, following the example above, respondents were provided with the following response choices:

(1) the Person (John)

(2) the Task (installing trunk latches)

(3) the Circumstances (luck)

(4) the Person and the Task (John and installing trunk latches)

(5) the Person and the Circumstances (John and luck)

(6) the Task and the Circumstances (installing trunk latches and luck)

(7) the Person, the Task, and the Circumstances (John, installing trunk latches, and luck)

Following the causal attribution, respondents were asked to indicate what action they would take in response to the subordinate's performance via the following question:

What action would you take in response to John's performance?

Respondents were then presented with five possible responses that were modeled after the general responses utilized by Mitchell and Wood (1980):

(1) praise/reward

(2) reprimand/punish

(3) coach/train

(4) redesign task

(5) do nothing

A sample item is shown in its entirety in Figure 2-1.

To enhance the evocative nature of the measure in an attempt to ensure that the aggressive participants viewed the situation as threatening (Bushman & Baumeister, 1998), the following written instructions for completing the questionnaire were presented:

> As a manager you are likely to find yourself directly responsible for the performance of multiple individuals. You will be responsible for their successes and their failures. Thus, it is important that you understand the causes of their successes and their failures. Unfortunately, the typical demands of a managerial position will preclude you

While working on the production line today, John installed door latches correctly. Almost none of John's coworkers installed door latches correctly. John also installed door locks correctly. In the past, John has installed door latches correctly.

Given this information, what caused John to correctly install the door latches? Something about:

□ the Person (John)

□ the Task (installing door latches)

□ the Circumstances (luck)

□ the Person and the Task (John and installing door latches)

□ the Person and the Circumstances (John and luck)

□ the Task and the Circumstances (installing door latches and luck)

□ the Person, the Task, and the Circumstances (John, installing door latches, and luck)

What action will you take in response to John's performance?

□ praise/reward

□ reprimand/punish

□ coach/train

□ redesign task

□ nothing

Figure 2-1. A Sample Attribution Item.

> from always being able to directly observe the daily performance of your subordinates. Many times you will have to infer the causes of their success and failures from other information that is available.
>
> For this questionnaire, you are to assume the role of a manager of an automotive assembly plant where you are directly responsible for the performance of multiple employees. For 16 of these employees, you will be presented with a series of statements regarding their individual performance and the performance of others. Your task is to decide, on the basis of the information given, what caused your employee to perform in the way he did. You must choose among one of seven possible causes and indicate your choice by checking the box next to the cause which you think is correct. After deciding what caused the behavior, you must decide what action you, as manager, will take.

Following these instructions, the sample item from Figure 2-1 was presented. Finally, following the sample item, the following reminder was presented:

> Please remember, as the supervisor of these individuals, it is important that you make the correct decision about the cause of their performance and take the appropriate action.

Aggression. The 25-item Conditional Reasoning Test of Aggression (CRT-A) was used to measure individual aggression. The CRT-A uses inductive reasoning problems to assess individual tendencies for using JMs to enhance the rational appeal of aggression (James & McIntyre, 2000). Each item consists of a stem and four responses. The stem presents a set of specific premises from which a general conclusion must be drawn. Responses consist of one logical aggressive response, one logical non-aggressive response, and two illogical responses. For example, Figure 2-2 presents an illustrative conditional reasoning problem.

In this problem, respondents are presented with a set of statements regarding the past quality of American cars and are asked to draw a logical conclusion. Aggressive individuals, particularly those utilizing the Hostile Attribution Bias and Victimization by Powerful Others Bias, are expected to identify Alternative D as being the most logically feasible option. While aggressive individuals may accept the logical plausibility of Alternative C, they should find Alternative D to be more logically attractive in that it provides greater insight into the motives of automobile manufactures. In contrast, non-aggressive individuals are expected to identify Alternative C as being the most logically feasible solution. While non-aggressive individuals may accept the logical plausibility of Alternative D, they should find Alternative C to be more logically attractive in that it lacks the cynicism and malice of Alternative D. Alternatives A and B are illogical responses and included to enhance the face validity of the problem.

Following test manual instructions (James & McIntyre, 2000), each aggressive response is scored +1 towards a total aggression score while each non-aggressive response is scored as +0 towards the total aggression score. Individuals receiving an overall aggression score of eight or more are considered to possess a strong implicit readiness to aggress and are classified as being aggressive. Individuals with an overall aggression score of less than eight are classified as being non-aggressive. In addition, each illogical response is counted +1 towards a total illogical score. Following the

American cars have gotten better in the last 15 years. American car makers started to build better cars when they began to lose business to the Japanese. Many American buyers thought that foreign cars were better made.

Which of the following is the most logical conclusion based on the above?

a. America was the world's largest producer of airplanes 15 years ago.

b. Swedish car makers lost business in America 15 years ago.

c. The Japanese knew more about building good cars 15 years ago.

d. American car makers built cars to wear out 15 years ago so they could make more money.

Figure 2-2. A Sample CRT-A Item

protocol described in the CRT-A test manual, individuals with an overall illogical score greater than or equal to five are not considered to have completed the measure earnestly and are removed from the analyses.[3]

Procedure

Data were collected on three separate occasions during the academic semester (i.e., 15 weeks). Following an in-class examination, students were presented with the opportunity to participate in the study for extra credit. The CRT-A was administered following the first exam, the attribution measure was administered following the second exam, and the demographic information was collected following the final exam.

Analyses

Attribution responses were aggregated into an 8 x 7 contingency table. Each of the eight rows represented one of the eight possible combinations of high and low consensus, distinctiveness, and consistency information (i.e., HLH, LLH, HHH, HLL, LHH, LLL, HHL, and LHL). Each of the seven columns represented one of the possible attributions that can be made by participants (i.e., P, T, C, PT, PC, TC, and PTC). Thus, each table entry represented the number of participants who made the corresponding column attribution on the basis of the information pattern presented in each row.

Traditional attribution studies have utilized relatively simple analytic procedures with responses to each information pattern (e.g., LLH) being analyzed separately. The predicted attribution for a particular information pattern is tested by examining whether

[3]A total of 61 participants were removed from an initial sample of 468 because they provided more than 4 illogical responses on the CRT-A.

it is significant (e.g., Does the LLH information pattern lead to a significantly greater number of person attributions?) and whether the non-predicted attributions are non-significant. This is often achieved by comparing the frequency of the predicted attribution (e.g., P for the LLH pattern) with the aggregate of the remaining attributions (i.e., P, T, C, PC, TC, and PTC). This method is effective in most cases; however, it becomes problematic when there is no significant difference between the aggregated values (Feinberg, 1977). Nevertheless, overall, these types of procedures are adequate; however, they do not utilize all of the information that exists in the 2^3 factorial structure that represents the information patterns and the potential responses (Iacobucci & McGill, 1990).

To avoid this shortcoming, subgroup responses were examined simultaneously. First, individual scores on the CRT-A were examined and participants were classified as either aggressive or non-aggressive. Following this classification, the attribution data for subordinate success and subordinate failure were examined separately for both the aggressive and non-aggressive groups (i.e., four 8 x 7 contingency tables were examined that represented the data from the non-aggressive group responding to employee success, the aggressive group responding to subordinate success, the non-aggressive group responding to subordinate failure, and the aggressive group responding to subordinate failure). The analytical method used to examine the attribution data followed the model presented by Iacobucci and McGill (1990). To test Hypotheses 1 through 4, the model of independence was fitted to each of the 8 x 7 contingency tables. The standardized residuals were then examined to determine which attributions were occurring significantly more than would be expected by chance alone.

Thus, for example, if the P attribution in the HLH condition had a standardized residual of 2.47, it would indicate that the number of P attributions was significantly greater ($p < .01$) than would be expected by chance alone.

To test Hypotheses 5 and 6, a series of log linear models were fitted to the data. To do this, two constraints were necessary (Iacobucci and McGill, 1990). First, a set of structural zeros were added to the attribution data to complete the 2^3 structure of the attributions. When the data is reshaped in this manner, there are a total of 62 possible effects: 6 main effects, 15 two-way interactions, 20 three-way interactions, 15 four-way interactions, and 6 five-way interactions. Second, each model had to include the three-way interaction of CsDsCy. This is due to the fact that log linear models require the inclusion of the highest interaction between the independent variables (Lloyd, 1999). Thus, with Cs, Ds, and Cy being treated as the independent variables and the P, T, and C dimensions being treated as the dependent variables, the CsDsCy term was included in every model.

With these two constraints, the effects were modeled in turn, starting with the simplest and moving to the most complex. Model I contained the CsDsCy interaction and the main effects (i.e., P, T, and C); model II contained all of the two-way interactions (e.g., CsP); and model III contained all of the three-way interactions. To test the significance of each of the individual interaction effects, nested models were tested. Each of the nested models represented the full model minus one of the interaction terms.[4] This allowed the significance of each removed effect to be tested. For example, model IIa contained all of the effects of model II except for the CsP effect.

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[4] The testing of the four-way effect utilized model III with the addition of the four-way effect to be tested.

Comparing the fit of models II and IIa tests the significance of the CsP effect. If model II does not provide a significantly better fit than model IIa, then the CsP effect is not significant and does not help to explain the data. Conversely, if model II is a significantly better fit than model IIa, then the CsP effect is significant and helps to explain the data. This process was used to test a total of 49 effects.[5] However, because of the sheer number of effects that were tested, a more conservative *p*-value of .01 was utilized. Once a model was found that fit the data, the parameter estimates were examined to determine the nature of the interactions.

The method for analyzing behavioral intentions, Hypotheses 7 through 10, followed the same process used to analyze Hypotheses 1 through 4. The data was organized into a 7 x 5 contingency table. Each of the seven rows represented one of the seven possible attributions than could be made by participants (i.e., P, T, C, PT, PC, TC, and PTC) and each of the 5 columns represented one of the five possible behavioral responses that participants could advocate. Thus, each table entry represented the number of participants who endorsed the column behavior given the row attribution. The model of independence was fitted to the 7 x 5 contingency table for each of the four possible groups (i.e., the non-aggressive group responding to subordinate success, the aggressive group responding to subordinate success, the non-aggressive group responding to subordinate failure, and the aggressive group responding to subordinate failure). The standardized residuals were then examined to determine which behavioral intentions were endorsed significantly more often than would be expected by chance

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[5] Insufficient degrees of freedom precluded testing of the five- and six-way effects.

alone.

CHAPTER 3

RESULTS

The results are presented in four sections. The first section describes the classification of aggressive individuals via the CRT-A. The second section addresses Hypotheses 1 through 4 via examination of the standardized residuals produced when fitting the data to the model of independence. The third section addresses Hypotheses 5 and 6 and details the log linear models examining the cognitive processing of attribution information. The final section addresses Hypotheses 7 through 10 via examination of the standardized residuals produced when fitting the data to the model of independence.

Aggressive Classification

Of the 407 study participants, the CRT-A identified 44 as being aggressive (11%). This is consistent with empirical research suggesting that 8% to 12% of the population is aggressive (James & McIntyre, 2000; James et al., 2005). Correlational analyses indicated that the classification of aggression was unrelated to age (r = .018, *ns*) and there was no significant difference between the aggression scores of different ethnic groups, $F(4, 380) = 1.251$, *ns*. Moreover, the internal consistency of the CRT-A was acceptable (K-R 20 = .77).

Analysis of Attributions

Subordinate Success. The attributions for subordinate success were first examined for the non-aggressive group (see Table 3-1). For each of the seven information patterns for which the ILM predicts an attribution, the predicted attribution

Table 3-1. Standardized Residuals for Attributions of Subordinate Success

CsDsCy	Attributions P	T	C	PT	PC	TC	PTC
Non-aggressive (n = 363)							
HLH	4.35	1.59	-3.99	4.09	-1.94	-5.35	0.19
LLH	**17.55**	-4.53	-3.99	-0.72	-4.58	-2.84	-1.30
HHH	-4.22	**16.39**	-4.73	-1.57	-3.88	-2.28	-1.49
HLL	-4.22	-1.34	**10.29**	-4.33	0.69	2.18	-2.41
LHH	-3.81	-4.91	-1.93	**10.83**	-2.36	3.58	-3.53
LLL	-0.54	-3.89	-2.96	0.00	**12.06**	-3.12	-1.86
HHL	-3.81	-1.59	3.22	-4.82	-0.14	**9.57**	-1.67
LHL	-5.31	-1.72	4.10	-3.49	0.14	-1.73	**12.07**
Aggressive (n = 44)							
HLH	0.88	0.53	-1.98	2.35	0.30	-1.98	-0.44
LLH	**5.41**	-1.41	-0.73	0.61	-1.70	-0.51	-1.97
HHH	-2.01	**6.75**	-1.98	-0.09	-2.10	-0.51	-0.44
HLL	-1.90	-2.19	**5.53**	-1.83	-0.90	0.97	0.57
LHH	0.05	-1.41	-0.73	**3.39**	-1.70	0.60	-0.95
LLL	0.05	-1.80	-1.15	-0.09	**5.50**	-1.61	-0.95
HHL	-0.77	0.15	0.10	-2.87	-0.10	**3.54**	0.06
LHL	-2.01	-0.63	0.94	-1.48	0.70	-0.51	**4.13**

Note. Cs = Consensus; Ds = Distinctiveness; Cy = Consistency; H = High; L = Low; P = Person; T = Task; C = Circumstances; PT = Person x Task; PC = Person x Circumstances; TC = Task x Circumstances; PTC = Person x Task x Circumstances. The attributions predicted by the inductive logic model are in bold. Attributions that were endorsed significantly more than would be expected by chance ($p < .05$) are underlined.

was the largest standardized residual. When non-aggressive participants were presented with the LLH information pattern, they made significantly more P attributions than would be expected by chance alone ($z = 17.55$, $p < .001$); when presented with the HHH information pattern, they made significantly more T attributions ($z = 16.39$, $p < .001$); when presented with the HLL information pattern, they made significantly more C attributions ($z = 10.29$, $p < .001$); when presented with the LHH information pattern, they made significantly more PT attributions ($z = 10.83$, $p < .001$); when presented with the LLL information pattern, they made significantly more PC attributions ($z = 12.06$, $p < .001$); when presented with the HHL information pattern, they made significantly more TC attributions ($z = 9.57$, $p < .001$); and when presented with the LHL information pattern, they made significantly more PTC attributions ($z = 12.07$, $p < .001$). Several additional unpredicted attributions were also significant. When non-aggressive participants were presented with the HLL information pattern, they made significantly more TC attributions than would be expected by chance alone ($z = 2.18$, $p < .05$); when presented with the LHH information pattern, they made significantly more TC attributions ($z = 3.58$, $p < .001$); when presented with the HHL information pattern, they made significantly more C attributions ($z = 3.22$, $p < .01$); and when presented with the LHL information pattern, they made significantly more C attributions ($z = 4.10$, $p < .001$). Additionally, for the HLH information pattern, for which the ILM makes no prediction, non-aggressive participants made significantly more P attributions ($z = 4.35$, $p < .001$) and PT attributions ($z = 4.09$, $p < .001$), than would be expected by chance alone. Thus, overall, Hypothesis 1 is supported. When making attributions for subordinate success, the attributions of non-aggressive individuals follow the predictions of the ILM.

The attributions of the aggressive group followed a similar pattern. When aggressive participants were presented with the LLH information pattern, they made significantly more P attributions than would be expected by chance alone ($z = 5.41$, $p < .001$); when presented with the HHH information pattern, they made significantly more T attributions ($z = 6.75$, $p < .001$); when presented with the HLL information pattern, they made significantly more C attributions ($z = 5.53$, $p < .001$); when presented with the LHH information pattern, they made significantly more PT attributions ($z = 3.39$, $p < .001$); when presented with the LLL information pattern, they made significantly more PC attributions ($z = 5.50$, $p < .001$); when presented with the HHL information pattern, they made significantly more TC attributions ($z = 3.54$, $p < .001$); and when aggressive participants were presented with the LHL information pattern, they made significantly more PTC attributions than would be expected by chance alone ($z = 4.13$, $p < .001$). Finally, for the HLH information pattern, for which the ILM makes no prediction, aggressive participants made significantly more PT attributions than would be expected by chance alone ($z = 2.35$, $p < .01$). Thus, overall, Hypothesis 2 is supported. When making attributions for subordinate success, the attributions of aggressive individuals follow the predictions of the ILM.

Subordinate Failure. The attributions for subordinate failure were first examined for the non-aggressive group (see Table 3-2). As with the attributions for subordinate success, for each of the seven information patterns for which the ILM

Table 3-2. Standardized Residuals for Attributions of Subordinate Failure

	Attributions						
CsDsCy	P	T	C	PT	PC	TC	PTC
Non-aggressive (n = 363)							
HLH	1.16	0.10	-3.81	6.94	-1.16	-2.51	-2.83
LLH	**14.32**	-3.44	-4.53	0.83	-4.23	-0.35	-3.18
HHH	-5.36	**16.09**	-0.37	-3.66	-3.12	-2.18	-1.76
HLL	-4.53	-2.39	**8.81**	-4.40	2.46	1.58	0.53
LHH	-0.62	-2.91	-3.81	**10.43**	-2.28	-0.55	-1.76
LLL	-0.02	-4.35	-1.81	-1.66	**10.56**	-2.35	-0.35
HHL	-5.15	1.11	4.17	-5.31	-2.17	**9.86**	0.68
LHL	0.21	-4.22	1.35	-3.16	-0.05	-0.38	**8.67**
Aggressive (n = 44)							
HLH	-0.74	1.10	-0.73	2.23	-1.02	-1.06	0.43
LLH	**2.76**	0.17	-1.56	-0.15	-1.02	0.15	-2.03
HHH	-1.82	**3.89**	-1.15	2.23	-1.02	-1.06	-0.06
HLL	-2.09	-0.29	**3.44**	-1.73	1.70	0.15	-0.06
LHH	1.69	-1.69	-1.15	**0.64**	-0.63	-0.45	0.43
LLL	1.96	-1.22	0.10	-0.54	**0.92**	-1.66	-1.54
HHL	-1.28	-0.29	0.94	-2.13	1.31	**3.77**	-0.55
LHL	-0.47	-1.69	0.10	-0.54	-0.24	0.15	**3.39**

Note. Cs = Consensus; Ds = Distinctiveness; Cy = Consistency; H = High; L = Low; P = Person; T = Task; C = Circumstances; PT = Person x Task; PC = Person x Circumstances; TC = Task x Circumstances; PTC = Person x Task x Circumstances. The attributions predicted by the inductive logic model are in bold. Attributions that were endorsed significantly more than would be expected by chance ($p < .05$) are underlined.

predicts an attribution, the predicted attribution was the largest standardized residual. When non-aggressive individuals were presented with the LLH information pattern, they made significantly more P attributions ($z = 14.32$, $p < .001$); when presented with the HHH information pattern, they made significantly more T attributions ($z = 16.09$, $p < .001$); when presented with the HLL information pattern, they made significantly more C attributions ($z = 8.81$, $p < .001$); when presented with the LHH information pattern, they made significantly more PT attributions ($z = 10.43$, $p < .001$); when presented with the LLL information pattern, they made significantly more PC attributions ($z = 10.56$, $p < .001$); when presented with the HHL information pattern, they made significantly more TC attributions ($z = 9.86$, $p < .001$); and when presented with the LHL information pattern, they made significantly more PTC attributions ($z = 8.67$, $p < .001$). Several additional unpredicted attributions were also significant. When non-aggressive participants were presented with the HLL information pattern, they made significantly more PC attributions than would be expected by chance alone ($z = 2.46$, $p < .01$); and when presented with the HHL information pattern, they made significantly more C attributions ($z = 4.17$, $p < .001$). Finally, for the HLH information pattern, for which the ILM makes no prediction, non-aggressive participants made significantly more PT attributions than would be expected by chance alone ($z = 6.94$, $p < .001$). Thus, overall, Hypothesis 3 is supported. When making attributions for subordinate failure, the attributions of non-aggressive individuals follow the predictions of the ILM.

In contrast, the attributions of the aggressive group followed a slightly different pattern. As with the non-aggressive group, when aggressive participants were presented with the LLH information pattern, they made significantly more P attributions than would be expected by chance alone ($z = 2.76$, $p < .01$); when presented with the HHH information pattern, they made significantly more T attributions ($z = 3.89$, $p < .001$) and significantly more PT attributions ($z = 2.23$, $p < .01$); when presented with the HLL information pattern, they made significantly more C attributions ($z = 3.44$, $p < .001$) and significantly more PC attributions ($z = 1.70$, $p < .05$); when presented with the HHL information pattern, they made significantly more TC attributions ($z = 3.77$, $p < .001$); and when presented with the LHL information pattern, they made significantly more PTC attributions ($z = 3.39$, $p < .001$). Additionally, for the HLH information patter, for which the ILM makes no prediction, aggressive individuals made more PT attributions than would be expected by chance alone ($z = 2.23$, $p < .05$). However, unlike the non-aggressive group, when aggressive participants were presented with the LHH information pattern, they made significantly more P attributions (rather than PT attributions) than would be expected by chance alone ($z = 1.69$, $p < .05$). Moreover, when aggressive participants were presented with the LLL information pattern, they made significantly more P attributions ($z = 1.96$, $p < .05$). which contrasted with the PC attributions made by non-aggressive individuals. Thus, overall, Hypothesis 4 is partially supported. When making attributions for subordinate failure, aggressive individuals made P attributions for three of the eight information patterns, two of which deviated from the predictions of the ILM.

Summary. When evaluating subordinate success, the attributions of non-aggressive and aggressive individuals did not differ from the predictions of the ILM. For each of the seven information patterns for which the ILM makes a prediction, the predicted attribution was the largest standardized residual for both non-aggressive and aggressive individuals. In contrast, when evaluating subordinate success, only the attributions of non-aggressive individuals held to the predictions of the ILM. The attributions of aggressive individuals deviated from the predictions of the ILM for two information patterns. Specifically, aggressive individuals made significantly more P attributions, and not the prescribed PT and PC attributions, for the LHH and LLL information patterns.

Analysis of Cognitive Processing

Non-Aggressive Individuals. The significant effects for the attributions of non-aggressive participants evaluating subordinate success and subordinate failure are displayed in Table 3-3. For the success condition, 24 effects were significant. The significant CsP, DsT, and CyC effects are consistent with the ILM. However, the additional significant effects (i.e., 7 four-way interactions and 7 three-way interactions) suggest that the processing of attribution is much more complex. Similarly, for the failure condition, 20 effects were significant. As with the success condition, the significant CsP, DsT, and CyC effects are consistent with the ILM. However, the additional significant effects (i.e., 8 four-way interactions and 5 three-way interactions) again suggest that the processing of attribution is somewhat more complex. Moreover, although there is a decrease in the total number of significant effects from evaluations

Table 3-3. Models and Fit Statistics for Non-Aggressive Individuals

	Model	Success Condition G^2	df	ΔG^2	Failure Condition G^2	df	ΔG^2
I.	CsDsCy P T C	1449.71	45		1168.63	45	
II.	CsDsCy CsP CsT CsC DsP DsT DsC CyP CyT CyC PT PC TC	485.84	33		253.46	33	
	For the following models, Model II was fitted without the noted term.						
IIa.	CsP	663.91	34	178.07 **	479.56	34	226.10 **
IIb.	CsT	487.46	34	1.62	267.10	34	13.64 **
IIc.	CsC	491.81	34	5.97 *	258.47	34	5.01
IId.	DsP	523.05	34	37.21 **	310.12	34	56.66 **
IIe.	DsT	630.41	34	144.57 **	334.75	34	81.29 **
IIf.	DsC	521.33	34	35.49 **	261.51	34	8.05
IIg.	CyP	493.34	34	7.50 *	257.11	34	3.65
IIh.	CyT	489.49	34	3.65	257.50	34	4.04 *
IIi.	CyC	810.26	34	324.42 **	598.63	34	345.17 **
IIj.	PT	510.56	34	24.72 **	253.51	34	.05
IIk.	PC	516.26	34	30.42 **	254.56	34	1.10
IIl.	TC	550.07	34	64.23 **	264.80	34	11.34 **
III.	CsDsCy CsDsP CsDsT CsDsC CsCyP CsCyT CsCyC CsPT CsPC CsTC DsCyP DsCyT DsCyC DsPT DsPC DsTC CyPT CyPC CyTC PTC	342.29	14		158.95	14	
	For the following models, Model III was fitted without the noted term.						
IIIa.	CsDsP	342.72	15	.43	179.95	15	21.00 **
IIIb.	CsDsT	349.46	15	7.17 *	164.58	15	5.63
IIIc.	CsDsC	354.65	15	12.36 **	161.89	15	2.94
IIId.	CsCyP	359.05	15	16.76 **	164.52	15	5.57
IIIe.	CsCyT	350.73	15	8.44 *	159.03	15	.08
IIIf.	CsCyC	348.57	15	6.28	158.96	15	.01
IIIg.	CsPT	342.98	15	.69	159.92	15	.97
IIIh.	CsPC	357.53	15	15.24 **	172.91	15	13.96 **
IIIi.	CsTC	342.44	15	.15	160.32	15	1.37
IIIj.	DsCyP	351.97	15	9.68 *	162.00	15	3.05
IIIk.	DsCyT	342.67	15	.38	161.36	15	2.41
IIIl.	DsCyC	344.21	15	1.92	167.97	15	9.02 *
IIIm.	DsPT	343.93	15	1.64	164.57	15	5.62
IIIn.	DsPC	342.39	15	.10	165.24	15	6.29
IIIo.	DsTC	344.77	15	2.48	166.44	15	7.49 *
IIIp.	CyPT	342.83	15	.54	160.27	15	1.32
IIIq.	CyPC	346.07	15	3.78	162.04	15	3.09
IIIr.	CyTC	349.29	15	7.00 *	166.13	15	7.18 *
IIIs.	PTC	342.29	15	.00	158.95	15	.00
	For the following models, Model III was fitted with the noted term added.						
IVa.	CsDsCyP	309.18	13	33.11 **	140.68	13	18.27 **
IVb.	CsDsCyT	341.64	13	.65	147.89	13	11.06 **
IVc.	CsDsCyC	341.98	13	.31	158.74	13	.21
IVd.	CsDsPT	264.37	13	77.92 **	124.97	13	33.98 **
IVe.	CsDsPC	328.87	13	13.42 **	132.10	13	26.85 **
IVf.	CsDsTC	324.40	13	17.89 **	156.30	13	2.65
IVg.	CsCyPT	341.88	13	.41	158.94	13	.01
IVh.	CsCyPC	218.80	13	123.49 **	134.87	13	24.08 **
IVi.	CsCyTC	312.94	13	29.35 **	146.82	13	12.13 **
IVj.	CsPTC	342.29	13	.00	158.95	13	.00
IVk.	DsCyPT	342.02	13	.27	156.52	13	2.43
IVl.	DsCyPC	342.18	13	.11	147.96	13	10.99 **
IVm.	DsCyTC	297.33	13	44.96 **	111.67	13	47.28 **
IVn.	DsPTC	342.29	13	.00	158.95	13	.00
IVo.	CyPTC	342.29	13	.00	158.95	13	.00

Note. ΔG^2 tests are approximately distributed chi-squares with a single degree of freedom. Cs = Consensus; Ds = Distinctiveness; Cy = Consistency; P = Person; T = Task; C = Circumstances.

* $p < .01$. ** $p < .001$.

of success to evaluations of failure (24 to 20; a 16% decrease), this decrease stems from fewer significant two-way interactions (10 to 7) and three-way interactions (7 to 5) with an increase in the number of significant four-way interactions (7 to 8). Thus, Hypothesis 5 is supported. For non-aggressive individuals, there is no substantial change in the complexity of the processing of attribution information between evaluations of subordinate success and evaluations of subordinate failure.

Aggressive Individuals. The significant effects for the attributions of aggressive individuals evaluating subordinate success and subordinate failure are displayed in Table 3-4. Like the non-aggressive group, the CsP, DsT, and CyC effects were significant. Moreover, there were two significant three-way interactions and four significant four-way interactions. In contrast, for the failure condition, the aggressive group only demonstrated five significant effects. Like the non-aggressive group, the CsP, DsT, and CyC effects were significant. However, only one three-way effect was significant (CsDsC) and no four-way effects were significant. Moreover, this decrease in the total number of significant effects (10 to 5; 50%) stems from the loss of 1 three-way interaction (2 to 1) and the loss of 4 four-way interactions. Thus, Hypothesis 6 is supported. For aggressive individuals, there is a substantial decrease in the complexity of the processing of attribution information between evaluations of subordinate success and evaluations of subordinate failure.

Parameter Estimates. The parameter estimates for each of the four models are listed in Table 3-5. Interestingly, regardless of the group or the condition, overall, the parameter estimates are virtually indistinguishable from one another. Only three

Table 3-4. Models and Fit Statistics for Aggressive Individuals

	Model	Success Condition G^2	df	ΔG^2	Failure Condition G^2	df	ΔG^2
I.	CsDsCy P T C	239.94	45		130.38	45	
II.	CsDsCy CsP CsT CsC DsP DsT DsC CyP CyT CyC PT PC TC	86.57	33		51.59	33	
	For the following models, Model II was fitted without the noted term.						
IIa.	CsP	107.65	34	21.08 **	62.08	34	10.49 *
IIb.	CsT	89.30	34	2.73	57.20	34	5.61
IIc.	CsC	86.66	34	.09	54.76	34	3.17
IId.	DsP	93.15	34	6.58	52.21	34	.62
IIe.	DsT	108.65	34	22.08 **	59.33	34	7.74 *
IIf.	DsC	87.15	34	.58	54.60	34	3.01
IIg.	CyP	86.57	34	.00	52.70	34	1.11
IIh.	CyT	88.77	34	2.20	58.45	34	6.86 *
IIi.	CyC	146.55	34	59.98 **	78.80	34	27.21 **
IIj.	PT	88.81	34	2.24	52.69	34	1.10
IIk.	PC	93.97	34	7.40 *	52.24	34	.65
IIl.	TC	91.19	34	4.62	53.42	34	1.83
III.	CsDsCy CsDsP CsDsT CsDsC CsCyP CsCyT CsCyC CsPT CsPC CsTC DsCyP DsCyT DsCyC DsPT DsPC DsTC CyPT CyPC CyTC PTC	52.60	14		25.19	14	
	For the following models, Model III was fitted without the noted term.						
IIIa.	CsDsP	53.54	15	.94	28.40	15	3.21
IIIb.	CsDsT	53.06	15	.46	26.39	15	1.20
IIIc.	CsDsC	55.39	15	2.79	31.83	15	6.64 *
IIId.	CsCyP	62.99	15	10.39 *	28.09	15	2.90
IIIe.	CsCyT	57.41	15	4.81	28.99	15	3.80
IIIf.	CsCyC	53.06	15	.46	25.70	15	.51
IIIg.	CsPT	53.27	15	.67	25.23	15	.04
IIIh.	CsPC	62.22	15	9.62 *	26.75	15	1.56
IIIi.	CsTC	55.78	15	3.18	25.88	15	.69
IIIj.	DsCyP	52.67	15	.07	25.19	15	.00
IIIk.	DsCyT	54.29	15	1.69	25.37	15	.18
IIIl.	DsCyC	52.62	15	.02	25.26	15	.07
IIIm.	DsPT	53.35	15	.75	25.19	15	.00
IIIn.	DsPC	56.99	15	4.39	25.20	15	.01
IIIo.	DsTC	54.94	15	2.34	26.61	15	1.42
IIIp.	CyPT	54.23	15	1.63	25.27	15	.08
IIIq.	CyPC	56.32	15	3.72	25.22	15	.03
IIIr.	CyTC	53.30	15	.70	25.52	15	.33
IIIs.	PTC	52.60	15	.00	25.19	15	.00
	For the following models, Model III was fitted with the noted term added.						
IVa.	CsDsCyP	42.56	13	10.04 *	23.25	13	1.94
IVb.	CsDsCyT	51.66	13	.94	23.70	13	1.49
IVc.	CsDsCyC	52.62	13	-.02	25.19	13	.00
IVd.	CsDsPT	35.74	13	16.86 **	20.10	13	5.09
IVe.	CsDsPC	50.76	13	1.84	23.16	13	2.03
IVf.	CsDsTC	50.83	13	1.77	24.29	13	.90
IVg.	CsCyPT	52.12	13	.48	19.61	13	5.58
IVh.	CsCyPC	33.28	13	19.32 **	25.15	13	.04
IVi.	CsCyTC	41.82	13	10.78 *	22.98	13	2.21
IVj.	CsPTC	52.59	13	.01	25.19	13	.00
IVk.	DsCyPT	49.32	13	3.28	24.36	13	.83
IVl.	DsCyPC	51.51	13	1.09	24.32	13	.87
IVm.	DsCyTC	51.26	13	1.34	22.60	13	2.59
IVn.	DsPTC	52.58	13	.02	25.18	13	.01
IVo.	CyPTC	52.58	13	.02	25.20	13	-.01

Note. ΔG^2 tests are approximately distributed chi-squares with a single degree of freedom. Cs = Consensus; Ds = Distinctiveness; Cy = Consistency; P = Person; T = Task; C = Circumstances.

* $p < .01$. ** $p < .001$.

Table 3-5. Parameter Estimates for Final Models

	Non-Aggressive Individuals		Aggressive Individuals	
Effect	Success[1]	Failure[2]	Success[3]	Failure[4]
CsP	-.1806 [a]	-.2589 [a]	-.1740 [a]	-.2350 [a]
DsP		.0292		
CyP	-.0916			
CsT	-.1314 [a]	-.1661 [a]		
DsT	.1803 [a]	.0728 [a]	.2158 [a]	.1456 [a]
CyT	.1575			
CsC	.0917			
DsC		.0726 [a]		.1256 [a]
CyC	-.3152 [a]	-.3154 [a]	-.4115 [a]	-.3087 [a]
PT	-.1820			
PC	-.1813 [a]		-.2107 [a]	
TC	-.2517 [a]	-.0913 [b]		
CsDsP		.1246		
CsDsT	.0674			
CsDsC	.0893 [a]			.1098 [a]
CsCyP	-.1038 [a]		-.2025 [a]	
CsCyT	-.0475			
CsCyC				
CsPT				
CsTC	-.1089 [a]	-.1091 [a]	-.2170 [a]	
CsPC				
DsCyP	.0316			
DsCyT				
DsCyC		-.0656		
DsPT				
DsPC				
DsTC		-.0720		
CyPT				
CyPC				
CyTC	-.0809 [a]	.0605 [b]		
PTC				
CsDsCyP	-.1152 [a]	-.0799 [a]	-.1397 [a]	
CsDsCyT		-.0619		
CsDsCyC				
CsDsPT	-.1097 [a]	-.0545 [a]	-.1765 [a]	
CsDsPC	.0168 [a]	.0708 [a]		
CsDsTC	.0690			
CsCyPT				
CsCyPC	.2199 [a]	.0858 [b]	.2247 [ab]	
CsCyTC	-.0537 [a]	-.0489 [a]	-.1451 [a]	
CsPTC				
DsCyPT				
DsCyPC		.0334		
DsCyTC	-.1138 [a]	-.1220 [a]		
DsPTC				
CyPTC				

Note. [ab]Paramter estimates with different superscripts are significantly different from one another, $p < .05$.

[1][CsDsCyP][CsDsPT][CsDsPC][CsDsTC][CsCyPC][CsCyTC][DsCyTC]

[2][CsDsCyP][CsDsCyT][CsDsPT][CsDsPC][CsCyPC][CsCyTC][DsCyPC][DsCyTC]

[3][CsDsCyP][CsDsPT][CsCyPC][CsCyTC]

[4][CsP][DsT][CyT][CyC][CsDsC]

effects, TC, CyTC, and CsCyPC, demonstrate significantly different parameter estimates across groups and conditions. Of these three, only one, CyTC, displays parameter estimates with different signs. However, this change is between non-aggressive individuals in their assessment of success and failure. The rest of the parameter estimates, regardless of the group (non-aggressive or aggressive) or the condition (success or failure) are all in the same direction with similar magnitudes.

Summary. In the processing of attribution information, non-aggressive individuals demonstrated no substantial difference in the complexity of their processing of attribution information for subordinate success and subordinate failure. However, aggressive individuals demonstrated a substantially less complex level of attribution information processing when evaluating subordinate failure in comparison to their evaluations of subordinate success. Additionally, despite the difference between the number and complexity of significant effects, the parameter estimates for the significant effects were, for the most part, statistically indifferent from one another. Thus, even though aggressive individuals were no longer utilizing numerous sources of information, they did not compensate for this reduction with greater reliance upon the effects that were being utilized.

Analysis of Behavioral Intentions

Subordinate Success. The behavioral intentions in response to subordinate success were first examined for the non-aggressive participants (see Table 3-6). When non-aggressive participants made a P attribution, they endorsed praise/reward significantly more often than would be expected by chance alone ($z = 7.82$, $p < .001$).

Table 3-6. Standardized Residuals for Intended Responses to Subordinate Success

	Intended Action				
Attribution	P/R	R/P	C/T	RT	N
Non-aggressive (n = 363)					
P	<u>7.82</u>	0.87	-1.73	-1.08	-5.15
T	-5.40	-1.47	<u>7.93</u>	-3.46	<u>2.68</u>
C	-6.24	0.15	-1.53	-0.84	<u>5.91</u>
PT	<u>2.51</u>	-0.11	-4.34	1.48	-0.65
PC	<u>4.22</u>	0.59	0.71	-1.66	-3.07
TC	-2.19	-0.76	-2.57	<u>2.42</u>	<u>2.02</u>
PTC	-1.55	1.15	0.19	<u>4.27</u>	-1.90
Aggressive (n = 44)					
P	<u>2.12</u>	0.44	-1.71	-1.06	-0.31
T	-1.43	-1.29	-1.27	-0.47	<u>1.76</u>
C	-1.08	-0.36	0.66	1.57	-0.20
PT	0.46	-0.04	<u>1.91</u>	-0.97	-0.45
PC	<u>2.49</u>	<u>1.95</u>	1.06	-0.76	-1.92
TC	-2.87	-0.62	0.16	0.81	1.41
PTC	0.70	0.03	-1.39	1.26	-0.52

Note. P = Person; T = Task; C = Circumstances; PT = Person x Task; PC = Person x Circumstances; TC = Task x Circumstances; PTC = Person x Task x Circumstances; P/R = Praise/Reward; R/P = Reprimand/Punish; C/T = Coach/Train; RT = Redesign Task; N = Nothing. Behaviors that were endorsed significantly more than would be expected by chance ($p < .05$) are underlined.

Following a T attribution, they endorsed coaching/training significantly more often than would be expected by chance alone ($z = 7.93$, $p < .001$). Additionally, this attribution pattern led non-aggressive participants to endorse doing nothing significantly more often than would be expected by chance alone ($z = 2.68$, $p < .01$). When non-aggressive participants made a C attribution, they endorsed doing nothing significantly more often than would be expected by chance alone ($z = 5.91$, $p < .001$). When non-aggressive participants a made a PT attribution, they endorsed praise/reward significantly more often than would be expected by chance alone ($z = 2.51$, $p < .01$). When non-aggressive participants made a PC attribution, they endorsed praise/reward significantly more often than would be expected by chance alone ($z = 4.22$, $p < .001$). When non-aggressive participants made a TC attribution, they endorsed redesigning the task significantly more often than would be expected by chance alone ($z = 2.42$, $p < .01$). Additionally, this attribution pattern led non-aggressive participants to endorse doing nothing significantly more often than would be expected by chance alone ($z = 2.02$, $p < .05$). Finally, when non-aggressive participants made a PTC attribution, they endorsed redesigning the task significantly more often than would be expected by chance alone ($z = 4.27$, $p < .001$). Thus, Hypothesis 7 is supported. When responding to instances of subordinate success, non-aggressive participants endorsed non-punitive behaviors.

Somewhat surprisingly, the behavioral intentions of the aggressive group did not strictly follow the pattern of the non-aggressive group when responding to instances of subordinate success. As with the non-aggressive group, when aggressive participants made a P attribution, they endorsed praise/reward significantly more often than would be expected by chance alone ($z = 2.12$, $p < .05$). When aggressive participants made a T attribution, they endorse doing nothing significantly more than anything else ($z = 1.76$, $p < .05$). However, when aggressive participants made a C attribution, no significant behavioral intention was evident. When aggressive participants a made PT attribution, they endorsed coaching and training significantly more often than would be expected by chance alone ($z = 1.91$, $p < .05$). When aggressive participants made a PC attribution, they endorsed praise/reward significantly more often than would be expected by chance alone ($z = 2.49$, $p < .001$).[6] When aggressive participants made a TC attribution, no significant behavioral intention was evident. Finally, when aggressive participants made a PTC attribution, no significant behavioral intention was evident. Thus, Hypothesis 8 is supported. When responding to instances of subordinate success, aggressive participants endorsed non-punitive responses.

Subordinate Failure. The behavioral intentions in response to subordinate failure were first examined for the non-aggressive participants (see Table 3-7). When non-aggressive participants made a P attribution, they endorsed coaching/training significantly more often than would be expected by chance alone ($z = 3.12$, $p < .01$). When non-aggressive participants made a T attribution, they endorsed redesigning the task more often than would be expected by chance alone ($z = 5.80$, $p < .001$). When

[6] For the PT attribution, an additional significant effect existed for the intended action of reprimand/punish ($z = 1.95$, $p < .05$). However, this is a spurious result based upon the extremely low occurrence of aggressive individuals advocating the reprimand/punish action. Reprimand/punish was advocated by two individuals following a P attribution, no individuals following a T attribution, one individual following a C attribution, two individuals following a PT attribution, four individuals following a PC attribution, one individual following a TC attribution, and one individual following a PTC attribution. Thus, although none of these frequencies are substantial, the four individuals advocating reprimand/punish were a sufficient enough deviation from the expected value ($f_e = 1.6$) to make the frequency significantly different from random despite its small size.

Table 3-7. Standardized Residuals for Intended Responses to Subordinate Failure

	Intended Action				
Attribution	P/R	R/P	C/T	RT	N
Non-aggressive (n = 363)					
P	-0.11	1.37	3.12	-6.08	1.17
T	1.41	-3.47	-0.55	5.80	-2.50
C	0.77	-2.20	-5.87	-4.06	10.76
PT	0.08	1.21	-0.52	5.00	-4.77
PC	-1.00	1.81	4.28	-5.98	-0.02
TC	-1.62	1.13	-2.22	8.10	-4.95
PTC	0.21	0.12	1.02	-2.01	0.54
Aggressive (n = 44)					
P	-0.92	4.58	-0.84	-1.52	-3.57
T	-1.39	-2.41	0.45	0.88	2.56
C	-0.09	-2.23	-0.24	0.17	2.63
PT	0.28	-0.09	0.68	1.45	-1.22
PC	0.90	0.12	0.25	0.61	-0.97
TC	0.91	-1.41	-0.17	0.45	1.11
PTC	1.01	-1.77	0.22	-1.40	2.32

Note. P = Person; T = Task; C = Circumstances; PT = Person x Task; PC = Person x Circumstances; TC = Task x Circumstances; PTC = Person x Task x Circumstances; P/R = Praise/Reward; R/P = Reprimand/Punish; C/T = Coach/Train; RT = Redesign Task; N = Nothing. Actions that were endorsed significantly more than would be expected by chance ($p < .05$) are italicized.

non-aggressive participants made a C attribution, they endorsed doing nothing more often than would be expected by chance alone ($z = 10.76$, $p < .001$). When non-aggressive participants a made PT attribution, they endorsed redesigning the task more often than would be expected by chance alone ($z = 5.00$, $p < .001$). When non-aggressive participants made a PC attribution, they endorsed coaching/training more often than would be expected by chance alone ($z = 4.28$, $p < .001$).[7] When non-aggressive participants made a TC attribution, they endorsed redesigning the task more often than would be expected by chance alone ($z = 8.10$, $p < .001$). Interestingly, when non-aggressive participants made a PTC attribution, no significant behavioral intention was evident. Thus, in general, Hypothesis 9 is supported. When responding to instances of subordinate failure, non-aggressive participants endorsed non-punitive behaviors.

As with the success condition, the behavioral intentions of the aggressive group did not strictly follow the pattern of the non-aggressive group. When aggressive participants made a P attribution, they endorsed reprimand/punishment significantly more often than would be expected by chance alone ($z = 4.58$, $p < .001$). When aggressive participants made a T attribution, they endorsed doing nothing more often than would be expected by chance alone ($z = 2.56$, $p < .001$). Similarly, when aggressive participants made a C attribution, they endorsed doing nothing more often than would be expected by chance alone ($z = 2.63$, $p < .001$). However, when aggressive participants made a PT attribution, a PC attribution, or a TC attribution, no

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[7] Similar to the previous note, the significant endorsement of reprimand/punish following a PC attribution is a statistical anomaly based upon the low occurrence of non-aggressive individuals advocating the reprimand/punish.

significant behavioral intention was evident. Finally, when aggressive participants made a PTC attribution, they endorsed doing nothing more often than would be expected by chance alone ($z = 2.32$, $p < .01$). Thus, Hypothesis 10 is partially supported. When responding to instances of subordinate failure, aggressive participants endorsed reprimand and punishment only following a P attribution.

Summary. When determining what course of action to take in response to successful subordinate performance, both non-aggressive and aggressive individuals advocated non-hostile responses. Similarly, when determining what course of action to take in response to subordinate failure, non-aggressive individuals advocated non-punitive responses. In contrast, aggressive individuals advocated a hostile response to subordinate failure, but only following a clear person attribution.

CHAPTER 4

DISCUSSION

In general, the results of this study provide substantial support for each of the proposed hypotheses. When evaluating subordinate success, the attributions of aggressive individuals do not greatly differ from those of non-aggressive individuals. As with non-aggressive individuals, aggressive individuals follow the pattern predicted by the ILM. Moreover, as aggressive individuals made the same attributions as non-aggressive individuals, they generally endorsed similar prosocial responses. Thus, aggressive individuals advocated praise and reward following both P and PC attributions. However, among aggressive individuals, there was no clearly preferred behavioral response following the other four attributions.

In contrast, when evaluating subordinate failure, the attributions of aggressive individuals differed from the non-aggressive group when responding to the LHH and LLL information patterns. For these two patterns, aggressive individuals made clear P attributions instead of the predicted PT and PC attributions. What makes this attributional shift most interesting is that it did not occur with the LHL information pattern. As with the LHH and LLL information patterns, the LHL information pattern implies the necessity of a P effect (i.e., low Cs). Yet aggressive individuals favored the PTC attribution over a strict P attribution. Thus, it appears that the JMs for aggression have a limit to their cognitive impact. While the JMs could effectively rationalize holding the subordinate accountable (and thus punishing him or her) for the conditions that engendered PT and PC attributions, they could not rationalize a shift from a PTC attribution to a P attribution. Of even greater interest is the decline in the number of significant effects from the success to the failure condition. Aggressive individuals demonstrated half as many significant effects in the failure condition as they did in the success condition (10 significant effects in the success condition and only 5 significant effects in the failure condition). This provides indirect evidence of the impact of JMs upon cognitive processes.

This calls into question the evocative nature of the stimuli. A substantial amount of aggression research highlights the necessity of a trigger to arouse aggressive behavior. If aggressive individuals are not provoked in some manner, the traditional belief is that they are not likely to act out. The trigger utilized in this study was undeniably weak. Yet it was potent enough to entice aggressive individuals to deviate from the standard attribution in two cases (LHH and LLL). Thus, this pattern of results may reflect the way in which aggressive individuals view the nature of subordinate-supervisor interactions rather than the way in which aggressive individuals respond when provoked. This would be consistent with Potency Bias JM which leads aggressive individuals to view social interactions as contests of will and dominance.

Implications

The most obvious implication of these findings, beyond the direct impact of excessive punishment, is the impact of aggressive supervisors upon subordinates' perceptions of procedural fairness. Procedural justice is a subordinate's perception of the fairness of the procedures used in making decisions regarding his or her performance (Folger & Greenberg, 1985). Thus, the methods by which decisions are made, not necessarily the outcomes themselves, are extremely important to employees.

Moreover, the correctness of the decisions regarding their performance is of critical importance (Sheppard, Lewicki, & Minton, 1992). The importance of procedural justice was highlighted by Sashkin and Williams (1990). They noted that organizations in which subordinates perceived their supervisors as being unfair evidenced higher levels of absenteeism and accident compensation costs. The relevance of this trend to the present study's findings is obvious. The differential attribution of aggressive individuals in response to the LHH and LLL information patterns would, most likely, be perceived by subordinates as being incorrect and thus unfair. Any subsequent punishment would be considered an egregious violation of procedural justice.

Limitations

There are a number of limitations regarding the presented research. First and foremost is the use of students as participants. As they were all undergraduates with minimal work experience, much less supervisory experience, it is quite possible that these results have limited generalizability to actual supervisory assessment of subordinate performance. While this may be the case, it should be noted that Fedor and Rowland (1989) concluded that "the longer supervisors are in their supervisory positions, the more they tend to perceive subordinates as having more control over their performance level" (p. 413). That is, the more experience a supervisor has, the more likely he or she is to make a P attribution. This suggests that aggressive supervisors could become more hostile towards unsuccessful subordinates the longer they are in a supervisory role (i.e., by making more P attributions which lead to retribution). Thus, the results of this study may actually provide a more conservative glimpse of the impact of aggression on leader attributions. Moreover, Anderson and Bushman (1997) note that laboratory studies of aggression do in fact demonstrate substantial external validity. In fact, based on the results of their meta-analysis, they concluded that "all of the individual difference variables (sex, trait aggressiveness, Type A personality) and most of the situational variables (provocation, alcohol, media violence, anonymity) consistently influence aggressive behavior both inside and outside the laboratory" (p. 35). Thus, while the present study is no substitute for a field study, the results are nevertheless meaningful and certainly worthy of further examination.

A second limitation regards the restricted response format of the attribution measure. Participants were forced to attribute the cause of the subordinate's behavior to one of the seven possible interactions of person, task, and circumstances. Participants were not allowed to answer in a manner that indicated "none of the above, " nor were they afforded the opportunity to seek additional information (see Gioia & Sims, 1986). Thus, some useful data was possibly lost. Traditional attribution research has utilized this exact response format without much concern (cf., Hewston & Jaspars, 1987; Hilton & Jaspars, 1987; Jaspars, 1983). Unfortunately, the use of log linear analyses necessitated the inclusion of structural zeros to complete the 2^3 contingency tables. The degree to which this impacted the results is unclear. However, Kimble and Seidel (1992) noted that people make causal attributions quite quickly and often prematurely (i.e., participants in their study made attributions even in the absence of complete information). Thus, it is possible that the attribution measure used in this study did not force participants to make attributions; it may have simply forced them to report their attributions when they may have preferred to withhold them. To avoid further concern, all eight possible response choices should be included in future research.

Third, the sample size of the aggressive group is problematic. Unfortunately, as only 8% to 12% of individuals are aggressive (James et al., 2005), it is extremely difficult to obtain sufficient data on this population. Moreover, the nature of the responses being frequency data severely limits statistical analysis. However, some basic analyses can provide further support for the obtained results. In particular, correlating the continuous aggression score with the total number of person attributions made when assessing subordinate success and subordinate failure yields correlations of -.028 (*ns*) and .27 ($p < .01$). Thus, the more aggressive an individual is the more person attributions he or she is likely to make when assessing the cause of subordinate failure. Although this is a rather basic analysis, it nevertheless supports the general findings while also circumventing the issue of reduced sample size in the aggressive subset. Thus, while sample size may have impacted some of the results (e.g., when assessing subordinate success, the non-aggressive group displayed 24 significant effects while the aggressive group displayed only 10 significant effects), some of the most critical results were most likely unaffected (e.g., the aggressive group displayed 10 significant effects when assessing subordinate success and only 5 significant effects when assessing subordinate failure).

Future Research

The results of this study highlight two critical areas that warrant further investigation. The first relates to the nature of the JMs for aggression. Whereas each of the JMs serves to rationalize aggressive behavior, they appear to do so in two distinct ways: reactive and proactive. The Hostile Attribution Bias and the Retribution Bias are more reactive in the methods by which they rationalize aggressive behavior. Both of these JMs appear to require an external triggering stimulus, be it person-based or otherwise, for their activation (e.g., the Hostile Attribution Bias alters the perception of another's behavior). In contrast, the Potency Bias, Victimization by Powerful Others Bias, and Social Discounting Bias are much more proactive in their operation. By definition, they alter the way in which aggressive individuals perceive the world (e.g., the Potency Bias leads aggressive individuals to view social interactions as contests for establishing dominance). Thus, whereas the Hostile Attribution Bias may lead an aggressive individual to interpret a subordinate's behavior as antagonistic, thus leading him or her to aggression against the subordinate, the Potency Bias may lead an aggressive individual to aggress against a subordinate without a particular triggering behavior. Future research needs to distinguish the manner by which these JMs operate and clarify whether or not they lead to differential patterns of aggression.

A second area that necessitates future research is identifying the point in the cognitive process at which JMs actually bias reasoning. From this study, it is apparent that the JMs for aggression do not alter information as it is initially observed. If this were the case, aggressive individuals should have formed a P attribution following the LHL pattern. As with the LHH and LLL information patterns, the LHL pattern implies a P effect via Cs information. Moreover, the LHL and LHH patterns both indicate a T effect while the LHL and LLL patterns both indicate a C effect. However, when responding to the LHL pattern, aggressive individuals obviously processed the Ds and Cy information in order to form the PTC attribution. Yet, when responding to the LHH and LLL patterns, aggressive individuals discarded the information corresponding to T and C effects. This suggests that the boundary for rationalizing aggressive behavior is not based upon the difference between the observed information and the attribution, but rather it is based upon the difference between the "correct" attribution and the aggressive attribution.

Conclusions

The results of this study suggest that, when responding to incidents of subordinate success, aggressive individuals make causal attributions that are no different than those of non-aggressive individuals. However, when responding to incidents of subordinate failure, given particular information patterns, aggressive individuals make substantially more person attributions than non-aggressive individuals. Moreover, aggressive individuals follow the P attribution with an intention to retaliate against the subordinate. This is in direct contrast to non-aggressive individuals who, when presented with similar information, make more appropriate attributions (e.g., PT instead of P) and intend to follow these attributions with more constructive behaviors (e.g., providing coaching/training following a PT attribution). More importantly, the results suggest that the JMs for aggression possess boundaries with regard to the amount of cognitive bias that they can produce. Aggressive individuals only distorted the attributions of two of the seven information patterns (there was no need for aggressive individuals to distort the LLH attribution pattern which leads to a P attribution). Thus, although the JMs for aggression are a powerful force in directing aggressive behavior, they cannot overcome all logical obstacles.

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VITA

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