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SUBSTITUTABILITY AND DEPENDENCY THREAT AS MODERATORS OF THE RELATIONSHIP BETWEEN COPING WITH UNCERTAINTY AND INTRAORGANIZATIONAL POWER

By

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ABSTRACT

SUBSTITUTABILITY AND DEPENDENCY THREAT AS MODERATORS OF THE RELATIONSHIP BETWEEN COPING WITH UNCERTAINTY AND INTRAORGANIZATIONAL POWER

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The relationships among coping with uncertainty, substitutability of home run hitters, dependency threat, and intraorganizational power were examined in a sample of college baseball teams. Previous studies suggesting that substitutability accounted for little variance in power used questionable operationalizations of relevant variables and failed to test important interactions. Previous studies investigating dependency threat have failed to examine the various components of dependence. It was found that substitutability, dependency threat, and the coping with uncertainty by dependency threat interaction contributed significantly to the prediction of power. It is suggested that managers see their players as occupying roles which require players to cope with specific types of uncertainty. The type of uncertainty depends on the role that the player is supposed to fill. Implications of these findings are discussed.

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INTRODUCTION

The concept of power has existed in the social/organizational psychology literature for decades. It is an important concept because it exists anywhere there are two or more people interacting with one another (Hickson et al., 1971). While power has received a fair amount of attention in the literature, very few models explaining the nature of power have been formulated. Of those authors who have sought to explain the use of power, only a handful (e.g., Pfeffer and Salancik, 1974; Salancik and Pfeffer, 1974; Hinings et al., 1974) present empirical data to support their models. For this reason, while many antecedents to and outcomes of power have been postulated, the exact nature of their relationships to one another have not been firmly established. The goal of the research described in this paper is to clarify the relationships among some proposed antecedents to power and power itself.

The Nature of Power

Power is often conceptualized as an attribute of an individual. However, this attribute cannot be measured directly. Instead, power is inferred from the supposed results of power, such as salary, influence, etc. For this reason, the unit of analysis can be unclear in a power study. For example, a person's power may, theoretically, be an attribute of that person, but that person's power may be measured in terms of its effects on a department. So, it

seems that power can be conceptualized at one level of analysis and operationalized at a different level. If this is the case, then individual power, for example, can be studied at the group level. This sounds strange if not logically impossible. It may also seem that this is what the present study is attempting to do in that the measures of one person's power are based on the behavior of another. However, Salancik (1990) has suggested a way out of this problem or, to be more precise, that the problem doesn't even exist.

Salancik has argued that power is not an attribute of any one entity, be it person or group. Instead, he suggests that power is a social relationship. Power exists where one entity, A, is dependent upon another entity, B, for some valued resource. Power cannot be an individual attribute because more than one person must be involved in order for power to exist. A person does not simply have power. A person has power **over something else.** One can say that dependence has an effect on resource allocation and that this relationship is one of power. One cannot say that dependence has an effect on power because dependence is a component of the power relationship. This seems like a useful, logical way of thinking about power. The present study adopts this view of power with the hope that it will address any level of analysis problems. In the present study, I sometimes refer to power as though it were an individual attribute. This is done merely for the sake of

simplicity.

Mechanic (1962) defines power as any force, be it personal or normative, that results in behavior that would not have occurred had the force not been present. The power literature suggests that this means power results in some form of bonus. Fossum & Fitch (1985) and Bartol & Martin (1989) looked at the effects of dependence on pay increases. Hinings et al. (1974) looked at differences across subunits which were on similar organizational levels in terms of participation in decisions, formal authority, and perceived power. This is important because it clarifies the conceptual nature of power. Power is not simply doing work and getting paid for it in some way. Instead, power results in behavior that would not have occurred had the force not been present, whether it be a pay increase, influence in decisions, or any other form of bonus.

Mechanic also makes a distinction between formal and informal power. Formal power is power that results from the formal structure of an organization. An example of this would be the power that results from holding a high-ranking position in an organization. The present paper, however, focusses on informal power, which can be roughly defined as that power which results from the ability to cope with uncertainty. This is a vague definition and is, therefore, dealt with in more detail in the section below titled, "Coping as a means to power".

The present study incorporates previous

conceptualizations of power in viewing it as the influence of a subordinate over managerial decisions relating to that subordinate. For example, Bartol & Martin (1989) examined power of a subordinate over pay allocation (i.e., raises) to that subordinate. This captures both the "influence over decisions" aspect of power as well as the "bonus" aspect of power. The present study, for reasons that are explained below, examines the power of a baseball player over decisions of the team manager relating to the number of games the player starts and the position in the batting order in which the player starts given certain levels of performance in defense, offense, and quality of practice time. For example, a player with power over managerial decisions would be allowed to start a game in spite of his committing fielding errors or slacking off during practice. Again, this captures both the "influence over decisions" aspect (i.e., starting a game) as well as the "bonus" aspect (i.e., starting in spite of poor performance). One way to acquire such power is by coping with uncertainty.

Coping as a Means to Power

In 1967, Thompson asked us to "...conceive of the organization as an open system, indeterminate and faced with uncertainty, but subject to criteria of rationality and hence needing certainty." Uncertainty, in this sense, is the result of any event or situation which can have an impact on an organization. Organizations strive to reduce this uncertainty by coping with it. Therefore, any member

of an organization who can cope with an event or situation that could have a significant impact on that organization and that can't be coped with by a superior has power over that organization. For example, if a machine breaks down on an assembly line and Person A can cope with that uncertainty (i.e., fix the machine), then A has power over the organization. That person possesses a resource for which the organization has a use. Hinings et al. (1974) described three different types of coping behavior. Coping by prevention involves reducing the probability of variations occurring in the inputs of the organization. Coping by information involves providing forewarning of probable variations in the inputs of the organization. Coping by absorption involves offsetting the effects of variations in the inputs of the organization. In the above example, uncertainty is coped with by absorption. An important machine breaks down, and Person A offsets the effects of this event by fixing the machine. Absorption is generally considered to be the most important type of coping (Crozier, 1964; Hinings et al., 1974). It alone comes after a variation has already occurred and is causing problems. At such a point, something has to be done immediately. The benefits of coping by prevention and information are "...more speculative and less obvious to [those] who might thereby be protected..." (Hinings et al., 1974). The operationalization of coping in the present study, nevertheless, captures both coping by absorption and coping

by prevention.

The ability to prevent or absorb uncertainty gives one informal power. In the above example as well as in the present study, the power is upward power; power subordinates possess to influence decisions of superiors. This is in contrast to the downward power referenced by the work of such authors as French & Raven (1959). As Blackburn (1981) suggested, power and dependence exist on both ends of a manager-subordinate relationship. This conceptualization fits perfectly within the framework presented by Salancik above. Subordinates simply wield a different kind of power. The ability to cope with important uncertainty is a component of this upward power. Nevertheless, ability to cope with uncertainty, no matter how important the uncertainty, is not the only determinant of power.

Another Source of Power: Substitutability

Several contemporary theories of power acknowledge the existence of other determinants of power. Mechanic (1962) calls one of these replaceability. Fossum and Fitch (1985) call it marketability. Hickson et al. (1971) call it substitutability. The idea is that coping leads to power only insofar as that coping is monopolized. If more than one person has the ability to cope with a given uncertainty, then the relationship between coping and power is diminished. In the assembly line example, A had the ability to fix the machine and, because of that ability, A had a necessary ingredient for reducing uncertainty. Person A,

therefore, had some potential for power. If, however, B and C have the same ability, then the power of A is lessened. In the latter case, the organization would not have to rely upon A to fix the machine and, therefore, should have been under less pressure to respond to the influence attempts of A.

Although the concept of substitutability as a component of power relationships is pervasive in models of power, its role has only been investigated empirically on a few occasions (e.g, Hinings et al., 1974; Fossum & Fitch, 1985). In what may be the most extensive look to date at the relationship between substitutability and power, Hinings et al.(1974) examined the correlations between their measure of substitutability and their nine measures of power which covered perceived power, participation power, and position power. Perceived power was simply the extent to which a subunit was perceived to wield influence. Participation power was the extent to which subunits were allowed to participate in various organizational decisions. Position power was simply formal authority. The correlations of substitutabilty with these nine measures of power (three measures of perceived power, four measures of participation power, and two measures of position power) ranged from .11 to .61, suggesting a moderate to strong relationship between substitutability and power. However, the correlation between coping and perceived power (perceived power was used because it was the measure that was best predicted by the

independent variables) was .81 while the correlation with substitutability partialled out was .74, suggesting that substitutability adds little to coping in the prediction of power. Nevertheless, those units found to be high in power were generally high in nonsubstitutability. The low partial correlation seemed to come from the fact that substitutability didn't appear to matter when coping was low. They concluded that substitutability was related to power, but that there was no clear idea of how it was related. There were, however, some potentially serious problems with this study.

The first problem stems from the operationalizations of substitutability. In their principal analyses, Hinings et al. used five indirect measures of substitutability such as level of formal education required, experience required, and training required, and one direct, perceptual measure. Substitutability can only be inferred from items such as job requirements, and the only direct measure was perceptual. Hickson et al. (1971) described such substitutability measures as job requirements to be secondary. Primary measures would seek to discover if alternative means of performing activities do exist, and if they do, whether it would be feasible to use them (Hickson et al., 1971). The main problem with such measures is that they are often difficult, if not impossible, to obtain. In the Hinings et al. (1974) study, no direct, objective measures were used, thus possibly casting doubt on the inferences that were

made.

The second problem with the Hinings et al. study lies in their data analyses. In concluding their 1974 study, Hinings et al. suggested that substitutability might interact with coping to affect power:

"...nonsubstitutability is of little consequence if the nonsubstitutable activities absorb little uncertainty...". Despite this intuitively reasonable statement, the interaction term was not tested. The reason for this may have been that coping with uncertainty and substitutability were highly correlated. This multicolinearity could cause a substantial decrease in statistical power with respect to the interaction term, thus limiting the chances of statistical significance. For this reason, it is important to obtain valid measures of coping and substitutability with as little unnecessary overlap as possible. While this may be much more difficult than it sounds, it may also be critical if one is to evaluate this hypothesized interaction empirically.

Ability to cope with uncertainty seems to reference that person (subunit, unit, etc.) who possesses the ability. In the example of the broken machine, the person who could fix the machine had this ability. Substitutability, however, is not an individual attribute. Just as one person cannot have power without another person over which he or she might have power, so it is with substitutability. It is not a characteristic of a person, but of a situation. An

organization has a certain amount of substitutability with respect to a certain person. While a person's ability to cope with uncertainty probably has an effect on the organization's substitutability with respect to that person, this effect may be exaggerated when substitutability is operationalized as it was by Hinings et al. (1974). Training and experience required for a position are essentially individual characteristics. These measures do not seem to encompass all of the factors which make up the organization's ability to substitute. This would explain why Hinings et al. found coping with uncertainty to account for so much more of the variance in power than did substitutability. Their operationalization of substitutability may only have tapped into that part of substitutability which stems from a person's ability to cope with uncertainty. It would be no wonder if ability to cope with uncertainty were highly related to training and experience. Perhaps a measure of substitutability which directly assesses an organization's capacity to compensate for the loss of a certain performer would show this correlation to be relatively small, hence allowing a better test of the coping-substitutability relationship.

A final note about the Hinings et al. (1974) study is that it failed to measure what has turned out to be another important antecedent to power; dependency threat.

A Third Antecedent To Power: Dependency Threat

Dependency threat is a construct which has received a growing amount of attention over the last two or three years. Dependency threat is the extent to which a member of a subordinate/superior relationship perceives the relationship to be in danger of dissolution (Bartol & Martin, 1988). Bartol & Martin (1989) examined the effects of dependency threat, dependence, and pay secrecy on pay allocations. These authors found: 1) a significant main effect for dependency threat, 2) a significant dependency threat by dependence interaction such that, under conditions of high dependence, dependency threat led to pay increases whereas, under conditions of low dependence, dependency threat did not lead to pay increases, and 3) a significant three-way interaction such that high dependence and high dependency threat led to pay increases only when pay decision information was available to the entire staff (i.e., pay openness). What is important about the Bartol & Martin paper for the present study (besides the fact that dependency threat was found to affect pay allocations) is the way they operationalized dependence. A superior was considered to be dependent upon a subordinate if the unique talents of the subordinate (i.e., asset-based lending) were required to carry out the directives of the executive vice-president. If asset-based lending was not important to the directives of the executive vice-president, then dependence was said to be low. To put it in terms of the present

study, coping with uncertainty (knowledge of asset-based lending) and substitutability (other members of the staff with knowledge of asset-based lending) were held constant. The subordinate was always the only member of the staff with knowledge of asset-based lending. It was the importance of this knowledge (and thus, dependence) and dependency threat that were varied. The present study expands on this. Ability to cope with uncertainty and substitutability are measured along with importance. What remains to be seen is whether dependency threat plays the same role in the dependence/ allocation relationship when coping, substitutability, and importance change as when only importance varies while coping and substitutability are held constant (i.e., Bartol & Martin, 1989). Specific operationalizations are discussed in more detail below.

Models Of Power

In an attempt to clarify some of the ideas and relationships that have been put forth in the previous sections, this section is devoted to describing in detail past models of power and relating these to the present study. The present study examines the relationships among coping with uncertainty, substitutability, dependency threat, and managerial decisions. The literature suggests several possible conceptual models of the relationships among the variables examined in the present study. One of these is the Resource Allocation Model of Salancik & Pfeffer (1974). These authors, in a study of university

departmental power, found that those departments that acquired outside grants controlled more positions on more important committees and were perceived by various faculty members to have more power than departments that did not acquire outside grants. In turn, these two outcomes led to greater graduate support for the departments. In other words, provision of valued resources led to power which, in turn, led to acquisition of different valued resources.

This conceptual model is very simple. It leaves several questions unanswered. For example, How would the relationships change if the effect on power of the number of departments that provided valuable resources (i.e., substitutability) were assessed? Hinings et al. (1974) attempted to answer this question by examining the effects of coping with uncertainty (roughly analogous to grant acquisition) and substitutability on power. As was mentioned previously, these authors found coping correlated highly with power while their measure of substitutability with the effects of coping partialled out did not. In concluding, they suggested two plausible models of routes to power. Although these were not causal models, the causal relationships that are assumed by the models can be described.

The first model suggests that the principal determinants of power are coping with important uncertainty and number of others dependent upon the person that can cope with the important uncertainty. Substitutability is

mentioned as something to be avoided, but it is not endowed with any direct links to power.

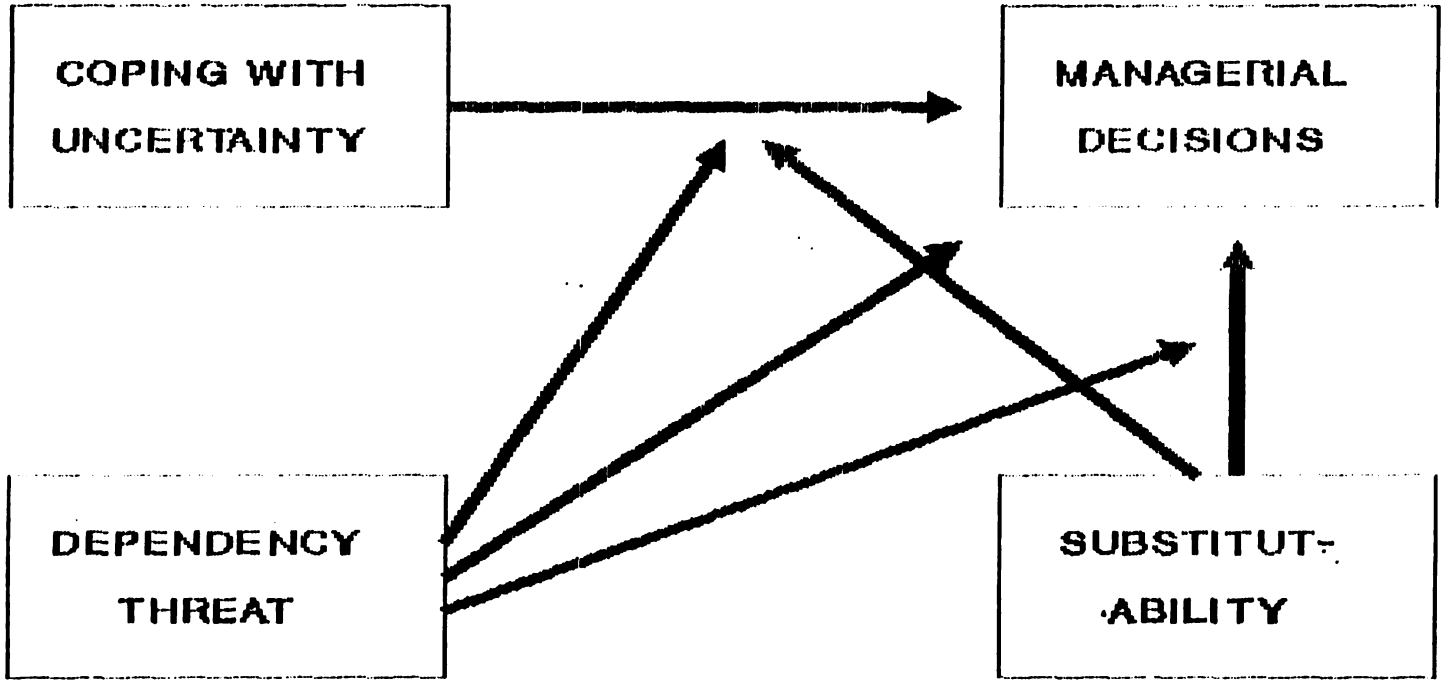
The second model ascribes even less importance to substitutability. Substitutability, or in this case, nonsubstitutability, is merely an incidental effect of coping with uncertainty with no further links in the model.

Both of these models explain in more detail the ways in which power is affected by provision of valued resources. They do, however, leave two important questions unanswered. First, how do all of these factors combine to affect the outcomes of power (i.e., graduate support)? Second, what would be the effect on power and its outcomes of a threat to the provision of valued resources such as grants (Salancik & Pfeffer, 1974) or specialized skills (Hinings et al., 1974)? For example, in the case of Salancik & Pfeffer, how would power and its outcomes be affected by the chairperson of a department who acquires copious grants receiving an attractive job offer from another school? Bartol & Martin (1989) addressed these questions and found that managers were most likely to approve a raise for a subordinate when that subordinate provided important, unique skills and was considering applying for another job. According to Bartol & Martin (1989), the relationship between dependency threat and pay allocation is moderated by dependence such that dependency threat leads to increased pay only if the allocator is dependent upon the recipient for some important resource. While this model shores up some of the weaknesses

of the Hinings et al. (1974) model, it also suffers from some of the same problems that were found in the Salancik & Pfeffer (1974) study and that were dealt with by Hinings et al. (1974). Hinings et al. (1974) broke down what Salancik & Pfeffer (1974) call provision of valued resources and what Bartol & Martin (1989) call dependence into some of its constituent parts such as coping with uncertainty and substitutability. The present study attempts to combine the strengths of all three of these studies within the overall framework suggested by Salancik (1990) that was mentioned earlier. I propose that something similar to the model presented in Figure 1 best describes the relationships among coping with uncertainty, substitutability, dependency threat, and managerial reward allocations.

Figure 1

A Conceptual Model of Power



The first point to be made with regard to this model is that "power" is not proposed as a variable. In accordance with the suggestions of Salancik (1990), the entire set of antecedents and outcomes make up a power relationship or power situation. The second point is that coping, substitutability, and dependency threat all have direct effects on allocations. This is in line with the findings of Hinings et al. (1974) and Bartol & Martin (1989). The third point is that substitutability moderates the relationship between coping and allocations. This follows from the hypotheses of the present study and is in line with the suggestions of Hinings et al. (1974). The final point to be made is that dependency threat moderates the relationships between power and coping with uncertainty, and power and substitutability. These moderator effects are hypothesized because Bartol & Martin (1989) found a significant dependence by dependency threat interaction. Unlike the Bartol & Martin study, however, the present study will examine various levels of coping with uncertainty and substitutability. If, as is hypothesized, coping with uncertainty and substitutability, as components of dependence, all lead to power, then dependency threat should moderate both of these relationships.

Objectives Of The Present Study

The present study attempts to clarify the relationships of substitutability, coping, and dependency threat to power. This is be accomplished in several ways. First, the

operationalizations of coping and substitutability used by Hinings et al.(1974) are improved upon by using direct measures of coping and substitutability, both objective and perceptual. Second, the role of substitutability in the coping-power relationship is specified. Hinings et al. (1974) did not test for the interaction of coping and substitutability. In the present study, measures of coping and substitutability that are relatively independent are developed and used to allow a meaningful test of the interaction that is consistent with prior theoretical statements about power (Hickson et al., 1971; Hinings et al., 1974). Third, the Bartol & Martin (1989) study is replicated and expanded upon with respect to dependency threat. Specifically, the role of dependency threat in power relationships is examined in a setting where coping with uncertainty and substitutability vary. In this way, the effects of dependency threat on the different components of dependence are examined. It is hypothesized that, above and beyond main effects, substitutability interacts with coping ability to affect power such that coping ability has less of an effect on power when substitutability is high than when substitutability is low.

The failure of Hinings et al. (1974) to use direct measures of substitutability may have resulted from unavailability of such measures in their sample of manufacturing subunits. If this was the case, then they would have had no way of knowing whether or not one unit was

performing or coping to such an extent as to be a legitimate substitute for another unit. The present study attempts to overcome this problem by using college baseball teams as the sample. College baseball teams keep extensive records of objective performance data (e.g., home runs, errors, assists, etc.) which make possible accurate assessments of coping with uncertainty and substitutability. For example, if a team has one player that hits 35 home runs in a season (a large number of home runs, which are an important component of team success), then that player can be said to have the ability to cope well with the uncertainty of generating runs (or not generating runs). Just as a car manufacturer needs someone to cope with the uncertainty of machine-down time, so does a baseball manager need someone to cope with the uncertainty of not driving in runs. Also, if the team as a whole only hit 50 home runs, then it can be said that the team is low on substitutability with respect to that player on that characteristic. If, however, the same team hits 300 home runs, then the team is high on substitutability with respect to that player. College baseball also offers some advantages over other types of organized baseball. Intramural baseball, for instance, tends to be less organized, with few, if any, practices held and few, if any, records kept. Also, teams will often differ greatly with respect to talent, motivation to win, etc.

The use of professional baseball, like college baseball, would avoid all of these problems. They are both highly organized, and such items as individual talent and motivation to win are relatively constant across teams. The problem with using professional baseball comes with the measurement of substitutability. If a professional who is vital to a team slacks off, he can be traded for a player of similar abilities. If a college player who is a vital part of a team misses practice or slacks off somehow, there is little the coaching staff can do (i.e., he can't be traded). A transfer student in college must sit out a year before playing a varsity sport. A professional is necessarily substitutable. A college player is not necessarily substitutable.

Study Hypotheses

Following Hinings et al.(1974), power is the dependent variable to be explained. Power, in this case, will be upward power. The question to be addressed is, When does the performance of subordinates influence the decisions of superiors? It is expected that a.) subjects high in coping with uncertainty have more power over managerial decisions concerning starts and batting order than subjects low in coping ability, b.) subjects high in substitutability have less power over such managerial decisions than do subjects low in substitutability, c.) substitutability interacts with coping to affect power such that coping has less of an effect on power when substitutability is high than when it

is low and d.) subjects high in dependency threat have more power over such managerial decisions than will subjects low in dependency threat, and e.) dependency threat moderates the relationships hypothesized in a.) and b.) above such that coping and substitutability will not be related to power when dependency threat is low. In other words, it is hypothesized that both substitutability and dependency threat moderate the relationship between coping with uncertainty and power and that dependency threat also moderates the relationship between substitutability and power.

Method

Sample and Design

320 Division 1 and Division 2 NCAA baseball coaches were mailed the 41 item questionnaire (Appendix A) in which they were asked about the value of their best home run hitter (specifics are described below). As low returns can affect the validity and reliability of a study (Roeher, 1963), several measures were taken to ensure an adequate return rate. Heberlein & Baumgartner (1978) found that questionnaires with content salient to the respondent had an average return rate 35% higher than those with non-salient content. As this questionnaire deals with decisions that baseball managers have to make everyday, its salience is assumed to be high. A second factor affecting return rate is number of contacts (e.g., Linsky, 1975; Dillman et al., 1974). For this reason, 198 of the managers were sent a postcard "warning" them of the questionnaire to come. Two weeks after the questionnaires were sent to these 198 coaches, they were mailed a second postcard thanking those who had returned them already and asking those who had not to please do so. Also, those coaches of the 198 who had not returned their questionnaires within a month of mailing were sent a second copy. Because of low return rate, questionnaires were sent to an additional 122 coaches. No additional contacts were made with this supplemental set of 122 coaches.

A third factor influencing return rate is the presence of a personally signed letter of introduction on letterhead paper (Longworth, 1953). The managers were sent a cover letter briefly describing the study and displaying the support of the study by the head baseball coach of Michigan State University and the assistant baseball coach of Tulane University (Appendix B). A fourth factor is the use of multi-colored, small-denomination stamps (Longworth, 1953). This, too, was employed. Finally, in accordance with the findings of Ferriss (1951), self-addressed, stamped return envelopes were used. Of the 320 coaches who were polled, 108 returned the questionnaire completed, for a return rate of 34%.

Objective Measures of Coping with Uncertainty and Substitutability

Coping ability was operationalized as the number of home runs hit by the team member with the most home runs divided by his number of at bats, thus providing an index of coping with uncertainty that is comparable across different teams. Number of home runs was used because it is crucial, objective, and relatively independent of other factors such as batting average, quality of teammates, etc. It is a function of little more than the ability to hit the ball hard. This operationalization encompasses both coping by prevention and coping by absorption. The uncertainty in this case is a lack of runs. A home run prevents this uncertainty if it doesn't already exist and absorbs it if it

does. "Substitutability" was operationalized in three ways. The first two operationalizations were very similar. They were the number of home runs hit by the team and the number of home runs hit by the team minus the number of home runs hit by the best home run hitter. For example, if a certain player hits 40 home runs and his team, as a whole, hits only 60, then there is no reasonable substitute for that player's home run hitting. If, on the other hand, a certain player hits 40 home runs and his team hits 400, then that player's home runs are only a small part of the home runs hit by the team and, therefore, that player is more substitutable with respect to home run hitting. By using team home runs, the team's overall substitutability with respect to its best home run hitter can be measured. While the number of home runs hit by the team leader in home runs is certainly related to the number of home runs hit by the team, it is only one small component of team home runs and should not be prohibitively correlated with it. The third measure of substitutability was the number of home runs hit by the second best home run hitter on the team. This provides an index of substitutability that differs conceptually from the first two. Unlike the first two indices, which better reflect the conceptualization of substitutability as a team-level construct, the number of home runs hit by the second best home run hitter measures the extent to which there is one person who could step in and take the place of the best home run hitter with respect to home run hitting.

Subjective Measures of Coping, Substitutability, and Dependency Threat

Subjective questionnaire items were used as alternate measures of the coping with uncertainty and substitutability variables. Item 4 in the questionnaire (se Appendix A), which asks the coach to rate his best home run hitter with respect to home run hitting ability, was used as the sole subjective measure of coping with uncertainty. Item 13, which asks the coach to estimate the number of players on his team who could do a reasonable job of substituting for the team's best home run hitter with respect to home run hitting, was used as the sole subjective measure of substitutability. As there were no objective measures of dependency threat available, only subjective measures of this construct were used. Items 40 and 41, which asked coaches to estimate the probability that his best home run hitter could get a minor league contract immediately and the probability that he could play in the major leagues some day, provided these measures.

Dependent Variables

Clusters of questionnaire items relating to three aspects of baseball performance and of managerial decision-making were used. The three clusters were offensive play, defensive play, and quality of practice time. Power was measured by asking the managers questions such as, How low would the subject's assist output have to go before he would be removed from the starting lineup (Defense)?, How high

would the subject's number of strikeouts have to go before he would be moved down in the batting order (Offense), and How many practices would the subject have to be late for before he would be removed from a lineup (Quality of practice time)?

Managers were also asked questions such as, How many times did the subject strike out?, Rate the subject with respect to the strength of his throwing arm, and Rate the subject on the extent to which he works hard on his hitting. These performance items were used merely as a frame of reference for the coaches filling out the questionnaire so that they would have a foundation on which to base their responses to the managerial decision items. These reference items were used in data analysis only insofar as they were partialled out of their respective regressions before coping, substitutability, dependency threat, and their interactions were entered into equations. This was done to remove any possible priming effects of the reference items. The item numbers and their corresponding clusters can be found in the Table 1. Appendix B lists the questionnaire items by cluster (i.e., offensive, defensive, or quality of practice time) and by category (i.e., frame of reference or measure).

In addition, one questionnaire item was used to get an overall measure of each of the clusters for each category. For example, item 17 asks the coach to rate the player with respect to his overall defensive ability, and item 18 asks

the coach to estimate how low this overall defensive ability would have to go before he would sit the player out for a game. Item 17 is a frame of reference item for item 18. Items 21 and 22, and 32 and 33 do the same for offensive ability and quality of practice time. These were intended as additional measures of their respective constructs.

Table 1
Questionnaire Items and the Clusters to Which They Belong

ITEM NUMBER	CLUSTER NUMBER*
5-8	1[a]
10-11	
17	
20-21	
26-28[b]	
4	2
9	
12	
14-15	
26	
28	
33-34	
37-38	
18-19	3
24-25	
29-32	
35-36	

* 1=Offensive Cluster, 2=Defensive Cluster, 3=Practice Cluster

[a]-Items 14, 18, 20, 24, 26, 29, 31, 33, 35, and 37 are frame of reference items.

[b]-Items 26 and 28 can be used for both the offensive and defensive clusters.

At this point, it should be made clear that the present study does not hypothesize, for instance, that a player who hits more home runs will have more errors, fewer assists, etc. The hypothesis is that he would be allowed to play in spite of these faults because of his home run hitting ability. This operationalization of power is analogous to those referenced by Bartol & Martin (1988,1989) in that it tests for changes in influence over managerial decisions as a function of coping ability. In the case of Bartol & Martin (1989), dependence on subordinates (coping with uncertainty being a component of this dependence) gives subordinates influence over managerial decisions concerning pay allocations. In college baseball, there are no salaries. Instead, coping ability buys one rewards of a slightly different nature; it buys a player chances to play in games in spite of deficiencies that the player might have. Specifically, home run hitting buys a player game time even if that player is less than proficient in other areas of coping ability. This is in line with the present conceptualization of power. For example, a player who makes more than his share of errors would not normally be a starter. If, however, this same player is uniquely able to cope with the uncertainty of a lack of runs by hitting home runs, then he will receive the "bonus" of appearing in the starting lineup. As an example from the offensive and practice clusters, a player who bats .220 or a player who never takes batting practice seriously would not normally be

a starter. Home runs, however, might influence managerial decisions concerning playing time.

As indicated above, coaches were asked to provide statistics such as the number of home runs hit by the team's best home run hitter so that, when filling out the questionnaire, they would have the actual statistics in mind.

Data Analysis

Data analyses were conducted in three stages. First, convergent validity of the various measures of coping with uncertainty and substitutability were examined by correlating the objective measures of coping with uncertainty and substitutability with the subjective measures of each.

Second, the viability of the formation of the three dependent variable clusters (offensive, defensive, and leadership-based decisions) was assessed with measures of internal consistency, item intercorrelations, and confirmatory factor analysis (LISREL VII, Joreskog & Sorbom, 1991).

Third, hierarchical regressions were conducted. Each of the power measures was regressed on coping with uncertainty, substitutability, dependency threat, the three first-order interactions, and the second-order interaction. Due to power considerations resulting from relatively small sample size, hypotheses were tested at $p<.10$ significance level.

Results

Development of Measures of the Dependent Variables

Means, standard deviations, and intercorrelations for the seven items representing the defensive cluster, the ten items representing the offensive cluster, and the five items representing the practice quality cluster are presented in Tables 2, 3, and 4 respectively.

Table 2

Means, Standard Deviations, and Intercorrelations for the Seven Items Representing the Defensive Cluster

Item[a]	N	Mean	SD	1	2	3	4	5	6	7
1. ERRREM	90	12.83	6.10	1.00						
2. PUTREM	103	5.78	34.68	.08	1.00					
3. ASSREM	101	2.86	9.87	.08	.11	1.00				
4. DEFREM	105	5.58	1.17	.08	-.14	-.15	1.00			
5. SPEDREM	103	1.45	0.86	-.05	.03	.43*	-.21*	1.00		
6. ARMREM	103	2.02	1.15	-.14	-.03	.30*	-.31*	.53*	1.00	
7. BALLREM	100	5.18	1.45	.29	.08	-.31*	.42*	-.35*	-.48*	1.00

* $p<.05$

[a] ERRREM=Number of errors before removal; PUTREM=Number of putouts before removal; ASSREM=Number of assists before removal; DEFREM=Defensive performance before removal; SPEDREM=Speed before removal; ARMREM=Strength of arm before removal; BALLREM=Ability to get to balls hit before removal.

Table 3

Means, Standard Deviations, and Intercorrelations for the Ten Items Representing the Offensive Cluster

Item[a]	N	Mean	SD	1	2	3	4	5	6	7	8	9	10
1.AVGREM	98	219.34	54.05	1.00									
2.KSDOWN	98	37.37	15.65	-.14	1.00								
3.KSREM	95	45.50	18.63	-.24*	.76*	1.00							
4.HDPDOWN	90	7.07	7.49	-.09	.02	.12	1.00						
5.HDPREM	83	10.02	10.98	.00	.07	.22	.82*	1.00					
6.AVGDOWN	94	224.61	67.89	.57*	-.11	-.21*	.02	.10	1.00				
7.OFFREM	104	2.43	1.02	.10	-.26*	-.13	.09	-.01	.15	1.00			
8.COUNT	104	5.47	1.31	.21*	.01	-.04	-.14	-.05	.23*	-.09	1.00		
9.SPEDREM	103	1.45	0.86	-.07	-.25*	-.10	.23*	.17	-.08	.34	-.18	1.00	
10.SPEDWN	103	1.91	1.34	.04	-.36*	-.26*	.12	.04	.05	.33*	-.21*	.59*	1.00

* $p<.05$

Table 3 (cont'd)

[a] AVGREM=Batting avg. before removal; KSDOWN=# of strikeouts before moving down in the batting order; KSREM=# of strikeouts before removal; HDPDOWN=# of times hit into a double play before moving down in the batting order; HDPREM=# of times hit into a double play before removal; AVGDOWN= Batting avg. before moving down in the batting order; OFFREM=Offensive performance before being removed; COUNT=Frequency with which he is allowed to swing with a 3-0 or 3-1 count; SPEDREM=Speed before being removed; SPEDOWN=Speed before moving down in the batting order.

Table 4

Means, Standard Deviations, and Intercorrelations for the Five Items Representing the Quality of Practice Cluster

Item[a]	N	Mean	SD	1	2	3	4	5
SERREM	105	2.71	1.54	1.00				
SHAPREM	103	2.64	1.33	.34*	1.00			
LATEREM	100	3.66	2.00	.06	-.05	1.00		
PRACREM	99	2.86	1.36	.35*	.55*	-.17	1.00	
HELPREM	101	2.08	1.40	.25*	.42*	-.04	.47*	1.00

* $p<.05$

[a] SERREM=Seriousness in batting practice before removal; SHAPREM=Extent to which he tries to stay in shape before removal; LATEREM=Extent to which he comes to practice late or leaves early before removal; PRACREM=Seriousness in practice in general before removal; HELPREM=Extent to which he was willing to help other team members before removal.

Four points should be made about these tables. First, number of putouts before removal (PUTREM, Table 2), number of assists before removal (ASSREM, Table 2), number of times hit into a double play before moving down in the batting order (HDPDOWN, Table 3), and number of times hit into a double play before removal (HDPREM, Table 3) have standard deviations that are larger than their means. This is caused by the fact that most of the coaches who returned questionnaires responded to these items with zeros, suggesting that putouts, assists, and number of times hitting into double plays alone would not be reason enough to remove their best home run hitters from the lineup or move them down in the batting order. For this reason, these items were not used in subsequent analyses.

The second point to be made about these tables is that number of errors before removal (ERRREM, Table 2), batting average before removal (AVGREM, Table 3), batting average before moving down in the batting order (AVGDOWN, Table 3), frequency with which he was allowed to swing with a three-ball count (COUNT, Table 3), and extent to which he was allowed to arrive to practice late before removal (LATEREM, Table 4) have relatively low intercorrelations with the rest of the items in their respective clusters. For this reason, these items were not used in subsequent cluster development analyses.

Third, because of their negative correlations with other items in their respective clusters, defensive

performance before removal (DEFREM), the two items involving strikeouts (KSDOWN and KSREM) and ability to get to balls hit in his direction before removal (BALLREM) were negatively scored for all subsequent analyses. The final point to be made about these tables is that the various items have substantially different means and standard deviations. For this reason, items were standardized and transformed to items with means of 50 and standard deviations of 10 so that all items would have unit weights when combined to form scales.

Table 5 presents the intercorrelations among the final set of twelve items (four offensive, four defensive, and four leadership) and coefficient alphas for each of the three clusters. These correlations were computed after the transformations to standard scores described above.

Table 5

Intercorrelations of T-Scores for the Final Set of Items and the Reliabilities for the Final Clusters

	1	2	3	4	5	6	7	8	9	10	11
1. KSREM[a]	.75[b]										
2. KSDOWN	.69*										
3. OFFREM	.26*	.39*									
4. SPEDOWN	.28*	.38*	.39*								
5. SPEDREM	.09	.24*	.43*	.53*							
6. DEFREM	.29*	.32*	.36*	.25*	.20*	.76[c]					
7. BALLREM	.35*	.38*	.35*	.33*	.43*	.41*					
8. ARMREM	.19	.37*	.42*	.45*	.53*	.27*	.50*				
9. SERREM	.14	.29*	.35*	.27*	.21*	.43*	.28*	.15	.70[d]		
10. SHAPREM	.21*	.27*	.26*	.25*	.29*	.17	.37*	.15	.28*		
11. PRACREM	.30*	.36*	.35*	.35*	.33*	.37*	.42*	.30*	.34*	.59*	
12. HELPREM	.13	.14	.34*	.12	.28*	.12	.19	.28*	.15	.34*	.47*

Table 5 (cont'd)

* $p<.05$

[a] The following items were reverse scored: KSREM, KSDOWN, DEFREM, and BALLREM.

[b] Coefficient alpha for the offensive cluster comprised of KSREM, KSDOWN, OFFREM, SPEDOWN, SPEDREM.

[c] Coefficient alpha for the defensive cluster comprised of SPEDREM, SPEDOWN, DEFREM, BALLREM, ARMREM.

[d] Coefficient alpha for the leadership cluster comprised of SERREM, SHAPREM, PRACREM, HELDOWN.

Two points should be made about Table 5. First, given the number of items in each of the clusters, coefficient alphas are moderate, suggesting that communalities are reasonable, but not outstanding (Cortina, in preparation). Second, the intercorrelations within clusters are larger than those outside the three clusters. These data offer some support for the discriminant validity of the three clusters. In an attempt to further investigate the discriminant validity of these measures, LISREL VII (Joreskog & Sorbom, 1991) was used to test one-factor and three-factor models.

Table 6

Lisrel Estimates for Lambda X and Phi Matrices for a Three-Factor Model

	Clusters		
Items	Offense	Defense	Leadership
KSREM	.722		
KSDOWN	.846		
OFFREM	.515		
SPEDOWN	.513		
SPEDREM		.611	
DEFREM		.499	
BALLREM		.746	
ARMREM		.679	
SERREM			.410
SHAPREM			.667
PRACREM			.878
HELPREM			.519
DEFENSE[a]	.669		
LEADERSHIP	.532	.631	

[a] The DEFENSE and LEADERSHIP rows contain the Lisrel estimates of the Phi matrix; that is, the relationships between the three latent constructs.

Table 7

LISREL Estimates for the Lambda X Matrix for a One-Factor Model

Items	Overall Factor
KSREM	.480
KSDOWN	.611
OFFREM	.627
SPEDOWN	.598
SPEDREM	.597
DEFREM	.514
BALLREM	.660
ARMREM	.610
SERREM	.459
SHAPREM	.513
PRACREM	.656
HELPREM	.414

Tables 6 and 7 present the LISREL estimates for the two models. Table 6 shows that the estimated loadings of the 12 items on their respective a priori factors range from .410 to .878 with a mean loading of .634. Table 7 shows that the estimated loadings of the 12 items on one overall factor range from .414 to .660 with a mean loading of .561. This suggests that the a priori factors represent the data better than a single factor explanation. However, the Phi Matrix presented at the bottom of Table 6 suggests that the three clusters are highly intercorrelated. In addition to these data, adjusted goodness of fit indices and root mean square residuals for the two models are similar, with the adjusted goodness of fit index being slightly larger for the three-factor model (.75 vs. .72) and root mean square residual being slightly smaller (i.e., more supportive) for the one-factor model (.10 vs. .09). Because the one-factor model is nested within the three-factor model, a test of the difference in Chi-squared was performed (Widaman, 1985). This difference (34.07, 3 degrees of freedom) was found to be significant ($p<.05$), and because Chi-squared was more supportive of the three-factor model (95.30 for the three-factor model vs. 129.37 for the one-factor model) than of the one-factor model, it was concluded that the a priori clusters of the dependent variable items better represent the items. As a result, all subsequent analyses were conducted for each of the three a priori clusters, which were formed by summing the four items constituting each

cluster.

Independent variables: coping, substitutability, and dependency threat

Objective offensive and defensive statistics

Means, standard deviations, and intercorrelations among the objective statistics are presented in Table 8.

Table 8

Means, Standard Deviations, and Intercorrelations for Objective, Offensive and Defensive Statistics

	N	MEAN	SD	1	2	3	4	5	6	7	8	9
1.HRRATIO[a] (Coping)	102	0.06	0.03	1.00								
2.TEAMHR (Substitutability)	103	34.72	19.22	.49*	1.00							
3.SECNDHR (Substitutability)	103	6.21	3.11	.59*	.89*	1.00						
4.OTHERS (Substitutability)	102	25.45	15.15	.42*	.99*	.85*	1.00					
5.AVG	102	340.70	54.11	.30*	.10	.04	.12	1.00				
6.ERRORS	96	5.21	3.89	-.12	.02	.06	.07	.03	1.00			
7.ASSISTS	92	26.09	32.01	.00	.14	.17	.06	.62*	.15	1.00		
8.PUTOUTS	93	148.69	126.10	.03	.37*	.30*	-.09	.19	-.02	.38*	1.00	

Table 8 (cont'd)

9.KS	101	25.08	13.37	.10	.44*	.49*	-.44*	-.09	-.11	.31*	.38*	1.00

* $p<.05$

[a] HRRATIO=Ratio of home runs to at bats (coping with uncertainty); TEAMHR=Number of home runs hit by the team (substitutability); SECNDHR=Number of home runs hit by the second best home run hitter on the team (substitutability); AVG=Batting average; OTHERS=TEAMHR-Number of homers hit by the best home run hitter (substitutability); KS=Strikeouts

Three points should be made about this table. First, the three possible substitutability measures; number of home runs hit by the team (TEAMHR), number of home runs hit by the second best home run hitter (SECNDHR), and the number of home runs hit by the team minus the number of home runs hit by the best home run hitter (OTHERS) are very highly correlated. Because the OTHERS variable best fits the conceptual definition of substitutability as a team-level construct (as opposed to SECNDHR), and because it is somewhat independent of coping with uncertainty (as opposed to TEAMHR, which includes the home runs hit by the best home run hitter), only the OTHERS variable is used in subsequent analyses.

The second point to be made about Table 8 is that the OTHERS variable has substantial positive skew. For this reason, all subsequent analyses involving this variable are performed with the square root of OTHERS (ROOTOTH).

The final point to be made about this table is that HRRATIO (Coping with Uncertainty) has a correlation of .38 with ROOTOTH (Substitutability). While this correlation is statistically significant, it is considerably smaller than the relationship between these two variables reported by Hinings et al. (1974), suggesting that substitutability may not be as dependent upon coping with uncertainty as was suggested by Hinings et al. (1971).

Subjective measures

Table 9 contains means, standard deviations, and intercorrelations for the subjective measures of coping with uncertainty, substitutability and dependency threat.

Table 9

Means, Standard Deviations, and Intercorrelations Among the Subjective Measures of the Three Independent Variables

Items	N	Mean	SD	1	2	3	4
RATEHR (Coping)	103	5.00	1.16				
SUBS (Substitutability)	105	0.44	0.50	-.13			
MINORS (Dependency Threat)	102	59.31	29.58	.34*	.00		
MAJORS (Dependency Threat)	104	31.59	27.68	.21*	.05	.74*	

RATEHR=Coaches' rating of home run hitting ability;
SUBS=Coaches' estimation of number of substitutes for the home run hitting of the best home run hitter;
MINORS=Coaches' estimation of the probability that the player could get a minor league contract immediately;
MAJORS=Coaches' estimation of the probability that the player could get a major league contract someday.

Three observations can be made about the data presented in Table 9. First, the item asking coaches to estimate the number of players on his team that could substitute for the home run hitting of the best home run hitter (SUBS, the subjective measure of substitutability) does not correlate significantly with any of the variables in Table 9. Also, although it is not shown in this table, this subjective measure of substitutability does not correlate with the three objective measures of substitutability. These correlations range from -.05 to .05. Possible reasons for these low correlations are suggested in the discussion section of this paper. Because of its lack of convergence with the onjective measures, the subjective substitutability measure is not used in subsequent analyses.

Second, Table 9 shows that probability of getting a minor league contract (MINORS) and probability of going to the major leagues (MAJORS) are highly correlated (.74). For this reason, these two items were combined to form a single measure of dependency threat.

Finally, the subjective measure of coping with uncertainty (RATEHR) is significantly correlated with the two items measuring dependency threat (MINORS and MAJORS), suggesting that the better able a subordinate is to cope with uncertainty, the more likely it is that the person will have alternative career options.

Relationships among subjective and objective measures

Table 10 contains means, standard deviations, and intercorrelations among the subjective and objective measures of the three independent variables.

Table 10

Means, Standard Deviations, and Intercorrelations Between Objective and Subjective Questionnaire Items

	N	MEAN	SD	1	2	3	4	5
1.RATEHR (Subjective Coping)	103	5.00	1.16					
2.HRRATIO (Objective Coping)	102	0.06	0.03	.53*				
3.ROOTOTH (Objective Substitutability)	102	4.82	1.48	.46*	.38*			
4.SUBS (Subjective Substitutability)	105	0.44	0.50	-.13	.02	-.03		
5.THREAT (Subjective Dependency Threat)	102	91.03	51.65	.30*	.26*	.25*	.03	

Note: Only subjective measures of dependency threat were available, and the subjective measure of substitutability was dropped from further analyses previously.

* $p<.05$

MAJORS=Chances of the best home run hitter going to the major leagues; MINORS=Chances of the best home run hitter being offered a minor league contract; RATEHR=Rating of the home run hitting of the best home run hitter; HRRATIO= Ratio of home runs to at bats for the best home run hitter; ROOTOTH=Square root of home runs hit by the rest of the team

There are two points to be made about Table 10. First, the objective (HRRATIO) and subjective (RATEHR) measures of coping with uncertainty are highly correlated, suggesting that baseball managers are, in fact, able to make accurate assessments of the ability of a subordinate to cope with an important uncertainty.

Second, the objective measure of coping with uncertainty (HRRATIO) is significantly correlated with the measure of dependency threat, thus providing further support for the notion that the better able a subordinate is to cope with uncertainty, the more likely it is that the person will have alternative career options.

To summarize the results up to this point, investigations of the intercorrelations and dimensionality of the various dependent measures suggested that the three a priori clusters are discriminable though correlated and that each cluster is measured with four items. Investigations of the intercorrelations between and among the various measures of the three independent variables suggested that these variables are, to some extent, correlated with each other, but that they aren't as interdependent as has been suggested by previous studies (Hinings et al., 1974; Bartol & Martin, 1989). Results of the present study have also shown that the subjective and objective measures of coping with uncertainty are highly correlated with each other while the subjective and objective measures of substitutability are not. In the next section, tests of the various hypotheses

are presented.

Tests of Hypotheses

Correlations between independent and dependent variables

Table 11 presents the correlations between the objective and subjective measures of the three independent variables and the three dependent variables.

Table 11

Correlations of Measures of the Three Independent Variables with Measures of the Three Dependent Variables

Objective Measures	Dependent Variables		
	Offensive	Defensive	Quality of Practice
Coping	.06	.11	.09
Substitute	-.09	-.12	-.10
Subjective Measures			
Coping	-.10	-.07	-.05
Substitute	.08	.14	.00
Dependency Threat	-.04	.19*	.12

* $p<.10$

The correlations presented in Table 11 are relatively low and, with one exception (Dependency Threat/Defense), nonsignificant, suggesting that dependency threat has more of an impact on managerial decisions than either coping or substitutability. Also, all of the correlations involving the objective measures are in the anticipated direction, with the correlations involving substitutability being negative and the correlations involving coping and dependency threat being positive. Because correlations between the subjective measures of coping and substitutability and the dependent variables are negative, and because this is inconsistent with the hypotheses of the present study, only the objective measures of these variables are used in subsequent analyses. Finally, these correlations suggest that this set of data do not provide support for hypotheses A. and B. of the present study. All of the hypotheses will be further investigated using hierarchical regression.

Hierarchical regressions

Hierarchical regressions were used to investigate 1.) the relationships between power and coping, substitutability, and dependency threat, 2.) the incremental validity of the three first-order interactions over their main effects, and 3.) the incremental validity of the second-order interaction. These regressions were performed using only the objective measures of coping and substitutability as the correlations in Table 11 indicated

that relationshps with subjective measures were in a direction opposite to that hypothesized. Table 12 displays the results of this examination.

Table 12

Hierarchical Regressions of Three Dependent Variables on Coping with Uncertainty, Substitutability, Dependency Threat, and Their Interactions

	Dependent Variables					
Objective	Offense		Defense		Practice	
Measures	R^2	Beta	R^2	Beta	R^2	Beta
Step 1						
COPING	.004	.06	.011	.11	.009	.09
THREAT	.001	-.04	.038*	.21	.016	.13
SUBST.	.014	-.13	.032*	-.19	.021	-.16
	.019		.081*		.046	
Step 2						
1 X 2	.030*	.66	.036*	.72	.002	.15
1 X 3	.007	-.33	.000	.08	.006	.30
2 X 3	.013	.59	.000	-.07	.002	-.25
	.050		.036		.010	
Step 3						
1 X 2 X 3	.024	1.01	.002	.28	.003	.35

* $p<.10$

Table 12 contains changes in R^2 and Beta-weights for each of three steps in the three hierarchical regressions. The results in this table provide support for the effects of substitutability (Hypothesis B), dependency threat (Hypothesis D), and the interaction between coping with uncertainty and dependency threat (Hypothesis E) on power. These findings are discussed in more detail below. Further analyses were performed to determine the nature of the dependency threat/coping interaction. In the group of subjects above the mean on dependency threat, the r^2 between the objective measure of coping (HRRATIO) and the Offensive dependent variable was .048, and the r^2 between the objective measure of coping and the Defensive dependent variable was .072. In the group below the mean on dependency threat, the relationships for the same variables were .015 and .029 respectively, suggesting that coping with uncertainty leads to playing time in spite of offensive and defensive deficiencies only when dependency threat is high (Hypothesis E). Plots of these interactions (Figures 2 and 3), however, were inconsistent with the a priori hypothesis regarding this interaction (Cohen & Cohen, 1983). Specifically, while the relationships between coping with uncertainty and power for the high dependency threat group were positive as expected, the same relationships for the low dependency threat group were negative, not zero as expected. Possible explanations of these findings are discussed below.

Figure 2

Plot of the Effects of the Interaction Between Coping with Uncertainty and Dependency Threat on Offensive Decisions

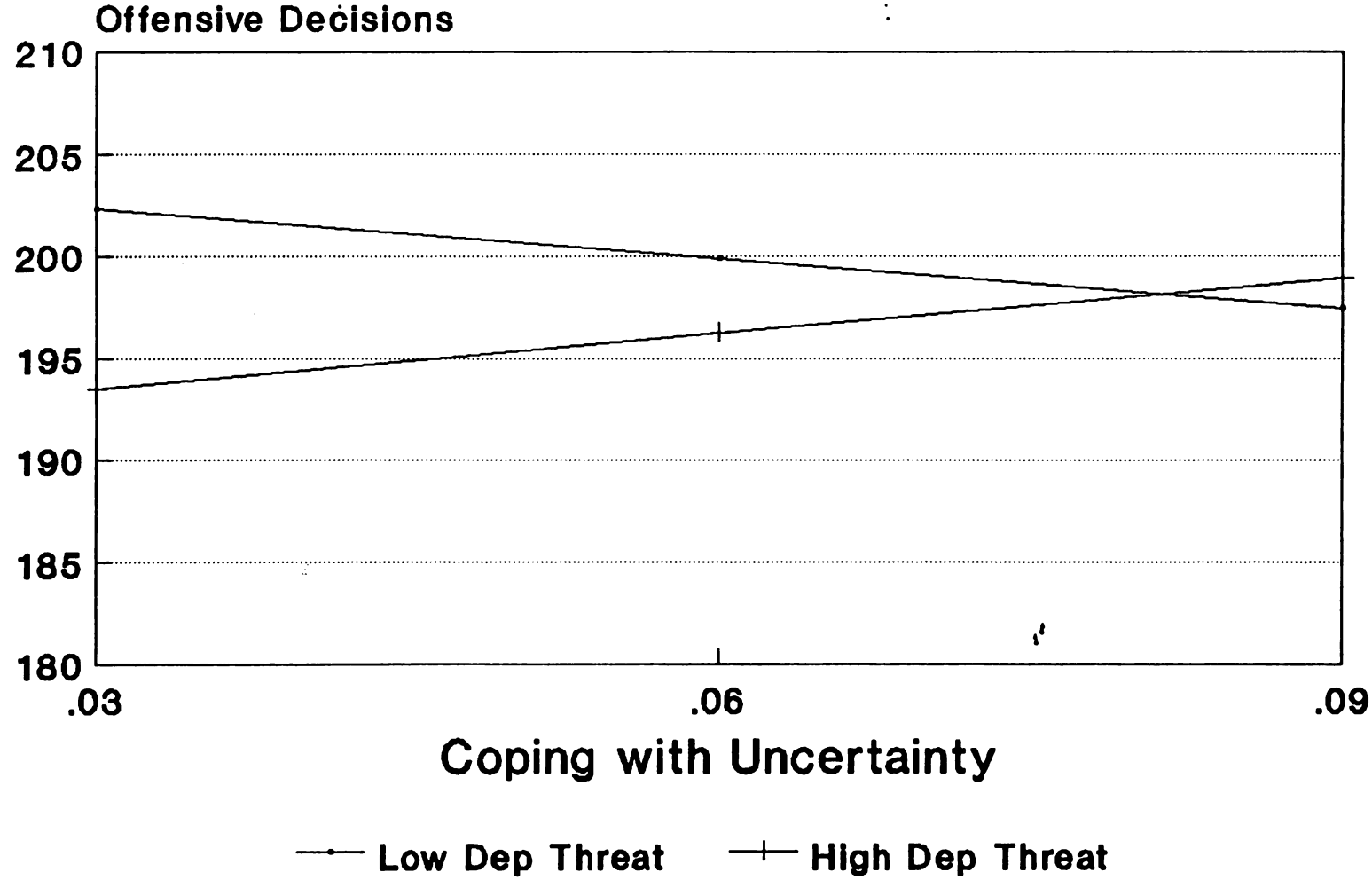
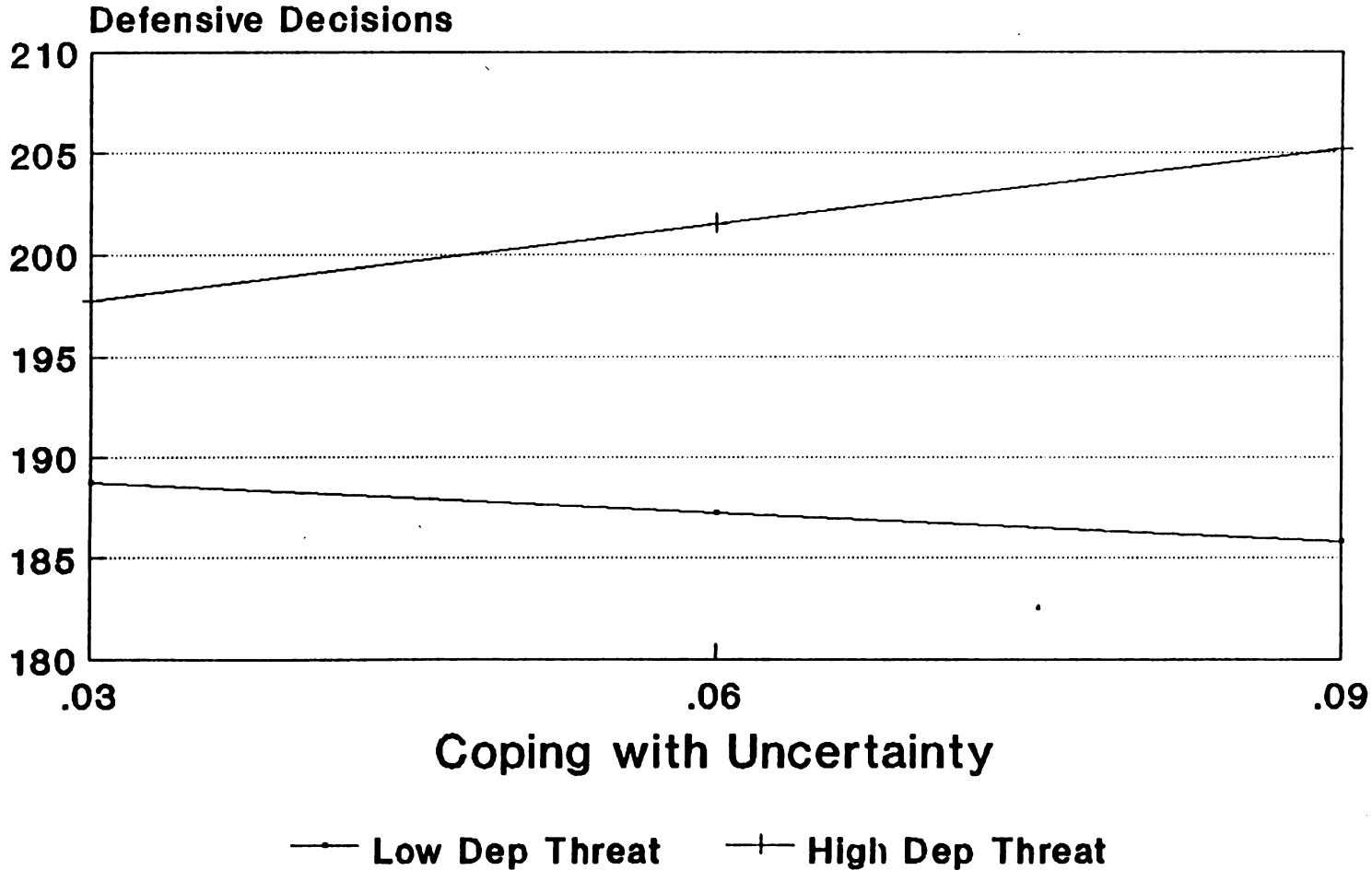


Figure 3

Plot of the Effects of the Interaction Between Coping with Uncertainty and Dependency Threat on Defensive Decisions



Discussion

Hypotheses

The first three hypotheses of the present study were that there would be significant main effects for coping with uncertainty, substitutability, and dependency threat. The main effect for coping with uncertainty was not significant for any of the three dependent variables, suggesting that coping with uncertainty alone does not lead to influence over managerial decisions. This finding is in contrast to the findings of Hinings et al. (1974) and to the hypotheses of the present study, but is in line with comments made by several of the coaches that participated in this study, specifically, that number of home runs seldom if ever provides enough information to make judgments about starting lineups.

The main effect for substitutability was significant for the Defensive dependent variable. This finding was in line with the findings of Hinings et al. (1974) and suggests that a player who has a monopoly on the ability to hit home runs will be allowed to play in spite of defensive deficiencies. The main effect for dependency threat was also significant for the Defensive dependent variable. This finding was in line with the findings of Bartol & Martin (1989) and suggests that a player with other career options will be allowed to play in spite of defensive deficiencies. Neither substitutability nor dependency threat had a

significant effect on the Offensive or Practice quality dependent variables.

The fourth hypothesis of the present study was that substitutability would moderate the relationship between coping with uncertainty and power. This interaction term was not significant for any of the dependent variables, suggesting that the effect of coping with uncertainty does not depend on the extent to which there are other team members who can cope with the same uncertainty. It would appear, instead, that the effect of coping with uncertainty depends upon the level of dependency threat.

The fifth hypothesis of the present study was that dependency threat would moderate the relationship between coping with uncertainty and power. This interaction term was significant for both the Offensive and Defensive dependent variables, suggesting that the effect of coping with uncertainty depends on the extent to which a player has other career options. Specifically, a player who hits home runs and has alternative career options would be allowed to start in spite of deficiencies in defensive and offensive play. This finding also sheds light on the mechanisms through which the relationships found by Bartol & Martin (1989) work. Specifically, dependency threat affects the dependence-power relationship by affecting components of dependence such as coping with uncertainty. The plots of these interactions, however, were not in the form predicted in the hypotheses of the present study. For those coaches

whose best home run hitter was below the mean on dependency threat, the relationship between coping with uncertainty and power was negative. In other words, within this group of subjects, as the number of home runs increased, influence over managerial decisions decreased. Initially, this finding is counterintuitive, but there is a possible explanation. These negative correlations could reflect a halo effect for home run hitters. But this halo effect may sometimes be overshadowed by other considerations.

As was mentioned in the introduction section of this paper, a baseball team has many of the same characteristics as any other work situation. There are managers who supervise subordinates who perform work that the managers cannot perform themselves. As such, baseball managers make the same kinds of rating errors that any other manager can be expected to make. One of these potential errors is halo error. With regard to home run hitters, a baseball manager may form a general impression about a player from one of the more salient aspects of his performance: home run hitting. So, the manager may see a player hit many home runs and expect that player to be talented in all aspects of the game. As the number of home runs increases, so would expectations. This, in turn, should lead to higher standards for the player in question. So, as the number of home runs increases, the extent to which a manager would expect and allow deficiencies in other areas should decrease. This would explain the negative correlation

between coping and managerial decisions for the low dependency threat group. As I suggested above, however, this might change when there are other considerations. When an external threat to the very existence of the relationship between a manager and a player appears (in this case, the possibility of becoming a professional baseball player), the dynamics of the superior-subordinate relationship can be expected to change. Specifically, an external threat might force a manager to be more lenient with a player who copes with an important uncertainty in an attempt to counteract the lure of the threat. As the ability of the player to cope with uncertainty increases, the manager could be expected to be more lenient (i.e., to allow the player to start in spite of deficiencies). Future research might examine changes in the relationship between coping with uncertainty and influence over managerial decisions as dependency threat changes. It may be that this relationship would be negative before dependency threat exists, but as dependency threat increases, the relationship would become positive.

Finally, although no hypotheses were made with respect to the second-order interaction term were presented, this term was tested and found to be nonsignificant for all three dependent measures.

Overall, these results suggest that coaches see their players as occupying roles and that these roles, in order to be fulfilled, demand certain types of behavior. These

results suggest that players who monopolize the ability to hit home runs, and players who hit a large number of home runs and have alternative career options are not expected to contribute as much defensively as are those who hit fewer home runs. Anyone who is reasonably familiar with baseball can think of many players who fit this description.

Limitations

There are several possible limitations to this study that should be discussed. First, poor return rate (34%) from a relatively small pool of subjects (approximately 340 Division 1 and 2 baseball programs) resulted in small sample size which, in turn, led to the use of $p<.10$ in the regressions. These regressions did, however, provide support for several *a priori* hypotheses and replicated some previous research results. Nevertheless, a larger sample size would have been desirable.

Second, the subjective measure of substitutability (SUBS) did not correlate significantly with either the objective measure of substitutability (ROOTOTH) or the dependent variables, thus failing to provide a useful alternative measure of substitutability. This item, however, may be conceptually different from the objective measure in that the subjective measure asks for the number of *individuals* who could replace the home run hitting of the best home run hitter while the objective measure, number of home runs hit by the rest of the team, is more in line with the conceptualization of substitutability as a team-level

construct that was adopted the present study. Coaches may not be able to conceptualize of substitutability of home run hitters as an individual-level construct.

Another potential limitation is that hypothetical decision items were used. However, the types of decisions used in the present study are decisions that a manager must make every day, i.e., weighing the importance of various factors and comparing players with respect to these factors. Also, pilot testing of the questionnaire showed that high school and college coaches were able to understand and relate to the questions that were asked, and survey respondents reported no difficulty in completing the questionnaire.

The final possible objection is that the measures of dependency threat may have been perceived simply as measures of overall ability or performance. This is possible, however, there is no logical reason for overall performance to moderate the relationship between coping with uncertainty and power, while the a priori hypothesis that dependency threat would moderate this relationship is based on the findings of previous research (e.g., Bartol & Martin, 1988, 1989).

Future directions

Future research should attempt to further examine the dynamics of the interactions between managers and subordinates and how these dynamics might change over time. Specifically, the interaction effects found in the present

study suggest that external influences such as dependency threat can literally turn manager/subordinate relationships upside down. Instead of the usual situation in which downward power is dominant (i.e., subordinates feeling the impact of and reacting to the power of managers), a new situation created by dependency threat emerges in which managers must react to the upward power of subordinates. Longitudinal research which examines changes in the relationships between managers and subordinates as dependency threat changes would be most useful in achieving this end. One possible source for such data is professional sports.

Extensive statistics for players and teams have been kept by most major professional athletic associations in this country and around the world for decades. This means that changes in objective statistics are available over periods of many years. This could be useful for the type of longitudinal research mentioned above. For example, the upward power of a home run hitter could be operationalized as the strength of the relationship between the defensive and offensive statistics (other than home runs), and number of innings played over the course of a season. A player would be high in power to the extent that offensive and defensive statistics fail to predict playing time. Dependency threat could be operationalized as the amount of time before a player becomes a free agent (a free agent in professional baseball is allowed to sign a contract with any

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team he chooses). Using this data, it might be predicted that coping with uncertainty (Home runs) would be negatively related to power (the defense/playing time relationship) in the period of time immediately following the signing of a contract (Low dependency threat). This would be due to the high expectations that the manager has for the player that result from halo error. However, this relationship would become positive over time as the end of the contract approaches and a manager feels pressure to appease a player whose career options are about to expand. In this way, archival data from athletic teams would provide the data necessary to the investigation of variables that are instrumental to theories of power.

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APPENDIX A

Questionnaire for managers

In your opinion, which region of the United States do you think produces the best baseball players?

A. Midwest
B. East
C. South
D. West

Please give a few examples and explain why you think this is?

1. Please fill in the following stats for the best home run hitter on the team you coach. The defensive position should refer to the position he occupied most often.

HOMERS	AT BATS	BATTING AVG.	STRIKEOUTS	SPOT IN ORDER
ASSISTS	**ERRORS**	**PUTOUTS**	**HIT INTO DOUBLE PLAY**	**DEFENSIVE POS. (DH?)**

2. Please indicate the number of home runs hit by your team overall._____HRs

3. Please indicate the number of home runs hit by your second best home run hitter._____HRs

The remaining questions refer to the player referred to your best home run hitter.

4. On the scale below, please rate your best HR hitter with respect to his home run hitting performance.

1.....2.....3.....4.....5.....6.....7
Very Poor Performance Fair Performance Excellent Performance

5. Please estimate how high the player's number of errors would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season (Position will be taken into account for all defensive questions. An example is in the instructions, and remember, No DH).

(Example, If he made 10 errors, then you would let him start the "second half" of the season, but if he made 20, you wouldn't, so your answer would be 20.) _____Errors

6. Please estimate how low the player's number of putouts would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season. If putouts don't matter, put 0._____Putouts

7. Please indicate how low the player's batting average would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season (In other words, all other things being equal, what is the lowest average you would let him start with)
_____AVG.

8. Please indicate how high the player's number of strikeouts would have to have been before you would move him to or below the fifth spot in the batting order for the start of the "second half" of the season . If he already is below the fifth spot, How high would his strikeouts have to have been before you would move him down lower in the batting order

(Example, If he struck out 30 times, you would leave him where he is, but if he struck out 50 times, you would bump him down. So your answer would be 50.)_____Ks.

9. Please indicate how high the player's number of strikeouts would have to have been before you would remove him from the starting lineup for the start of the "second half" of the season

(Example, If he struck out 40 times, you would let him start the "second half" of the season, but if he struck out 45 times, you wouldn't. So, your answer would be 45)_____Ks.

10. Please indicate how high the number of times the player hit into double plays would have to have been before you would move him to or below the fifth spot in the batting order for the start of the "second half" of the season . If he already is in or below the fifth spot, How high would the number of times he hit into double plays have to have been before you would move him down even lower in the batting order. If it doesn't matter, put 0.

(Example, If he hit into 6 double plays, you would leave him where he is, but if he hit into 15, you would bump him down. So, your answer would be 15.)_____HDPs.

11. Please indicate how high the number of times the player hit into double plays would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season. _____HDPs.

12. Please indicate how low the player's batting average would have to have been before he would be moved to or below the fifth spot in the batting order for the start of the "second half" of the season. If he already is in or below the fifth spot, How low would his average have to go before he would be moved lower in the order? _____AVG

13. Please estimate how many players there were on the team that could do a good job of substituting for the player with respect to home run hitting._____

14. Please indicate how low the player's number of assists would have to have been before you would remove him from the starting lineup for the start of the "second half" of the season (If assists don't matter, put 0.)

(Example, If he made 40 assists, you would let him start the "second half" of the season, but if he only made 20, you wouldn't. So, your answer would be 20)_____Assists.

15. Please indicate how low the player's number of home runs would have to have been before you would move him to or below the fifth spot in the batting order for the start of the "second half" of the season . If he already is in or below the fifth spot, How low would his home runs have to have been before you would move him down even lower in the batting order? _____HRs

16. Please indicate how low the player's number of home runs would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season._____HRs

For the remaining items, rate your best HR hitter with respect to the characteristics mentioned in each item. Mark your rating anywhere along the scale provided for each item. For example, on the item below, you would rate the player with respect to overall defensive performance.

17. His overall defensive performance.

1.....2.....3.....4.....5.....6.....7
Very Poor Performance | Fair Performance | Excellent Performance

18. Please estimate how low the player's defensive performance would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If his defensive performance were "Fair", then you would let him start, but if he had "Very Poor Performance", then he would be removed from the starting lineup for the start of the "second half" of the season. So, you would put your mark somewhere near the 1. If defense doesn't matter, put 1.

1.....2.....3.....4.....5.....6.....7
Very Poor Performance | Fair Performance | Excellent Performance

19. The extent to which he took his batting practice seriously (as seriously as he takes it in his games.)

1.....2.....3.....4.....5.....6.....7
Not very serious | Fairly serious | As serious as games

20. Please estimate how low the player's seriousness in batting practice would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season. If it doesn't matter, put 1.

Example: If he had been "Fairly Serious", you would leave him alone, but if he had been "Not Very Serious", he would be removed from the starting lineup for the start of the "second half" of the season. So, you would put your mark somewhere near 1. If it doesn't matter, put 1.

1.....2.....3.....4.....5.....6.....7
Not very serious | Fairly serious | As serious as games

21. His overall offensive performance.

1.....2.....3.....4.....5.....6.....7
Very Poor Performance | Fair Performance | Excellent Performance

22. Please estimate how low the player's overall offensive performance would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

1.....2.....3.....4.....5.....6.....7
Very Poor Performance | Fair Performance | Excellent Performance

23. The number of times he was allowed to swing at a pitch with a 3-0 or 3-1 count relative to the rest of the team.

Example: He was allowed to swing at more three-ball pitches than anyone else.
So, you would put your mark somewhere near the 7.

1.....2.....3.....4.....5.....6.....7
Less than anyone else | Average | More than anyone else

24. How important the player's home run hitting was to the team.

1.....2.....3.....4.....5.....6.....7
Not very important | Fairly important | Extremely important

25. The extent to which he tries to keep in shape.

1.....2.....3.....4.....5.....6.....7
Doesn't Try Very Hard | Tries Fairly Hard | Tries Very Hard

26. Please estimate how low the player's efforts to keep in shape would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season. If it doesn't matter, put 1.

1.....2.....3.....4.....5.....6.....7
Doesn't Try Very Hard | Tries Fairly Hard | Tries Very Hard

27. Please rate the player with respect to his speed.

1.....2.....3.....4.....5.....6.....7
Not Very Fast — Fairly Fast — Very Fast

28. Estimate how low the player's speed would have to have been before you would move him to or below the fifth spot in the batting order for the start of the "second half" of the season . If he already is in or below the fifth spot, How low would the player's speed have to have been before you would move him down even lower in the batting order? If it doesn't matter, put 1.

1.....2.....3.....4.....5.....6.....7
Not Very Fast — Fairly Fast — Very Fast

29. Please estimate how low the player's speed would have to have been before before he would be removed from the starting lineup for the start of the "second half" of the season. If it doesn't matter, put 1.

1.....2.....3.....4.....5.....6.....7
Not Very Fast — Fairly Fast — Very Fast

30. The extent to which he came to practice late or left early.

1.....2.....3.....4.....5.....6.....7
Almost never — Sometimes — Almost always

31. Please estimate how often the player would have to have come to practice late or leave early before he would be removed from the starting lineup for the start of the "second half" of the season.

1.....2.....3.....4.....5.....6.....7
Almost never — Sometimes — Almost always

32. The extent to which he took practice in general seriously. (as seriously as games)

```
1......2.....3.....4.....5.....6.....7
Not very        Fairly        As serious
serious         serious       as games
```

33. Please estimate how low the player's seriousness in practice in general would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

```
1.....2.....3.....4.....5.....6.....7
Not very       Fairly        As serious
serious        serious       as games
```

34. The extent to which he got to balls hit in his direction.

```
1......2.....3.....4.....5.....6.....7
Only Balls      Gets To        Gets To
Hit At Him      Some           Almost All
```

35. Please estimate how low the player's ability to get to balls would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season. If it doesn't matter, put 1.

```
1......2.....3.....4.....5.....6.....7
Only Balls      Gets To        Gets To
Hit At Him      Some           Almost All
```

36. The extent to which the player was willing to take time to help his teammates.

```
1......2.....3.....4.....5.....6.....7
Almost          Sometimes       Almost
Never                           Always
```

37. Please estimate how low the player's willingness to help would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season. If it doesn't matter, put 1.

1.....2.....3.....4.....5.....6.....7
Almost Never | Sometimes | Almost Always

38. Please rate the player on the extent to which he has a good arm.

1.....2.....3.....4.....5.....6.....7
Not Very Strong | Fairly Strong | Very Strong

39. Please estimate how bad his arm would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season. If it doesn't matter, put 1.

1.....2.....3.....4.....5.....6.....7
Not Very Strong | Fairly Strong | Very Strong

40. The probability that the player could get a minor league contract right now. Keep in mind that there is still the "second half" of the season to go.

0...10....20....30....40....50....60....70....80....90...100
No Chance Of Getting A Contract | About a 50/50 Chance | He Could Definitely Get A Contract

41. The probability that the player could make it to the major leagues someday.

0...10....20....30....40....50....60....70....80....90...100
No Chance of Making It | About a 50/50 Chance | He Could Definitely Make It

THANK YOU FOR YOUR HELP. IT IS GREATLY APPRECIATED!

Appendix B

Questionnaire items with their respective clusters and categories

Reference items for offensive dependent variables

20. On the scale below, please rate the player with respect to overall offensive performance.

1.....2.....3.....4.....5.....6.....7
Very Poor Performance — Fair Performance — Excellent Performance

26. Please rate the player with respect to his speed.

1.....2.....3.....4.....5.....6.....7
Not Very Fast — Fairly Fast — Very Fast

Dependent measures for offense

5. Please indicate how low the player's batting average would have to go before he would be moved below the fourth spot in the batting order for the start of the "second half" of the season. If he already is below the fourth spot, How low would his average have to go before he would be moved lower in the order? (Example: If he was in the fourth spot and batted .250, you would leave him there, but if he had been below .240, you would move him down in the batting order. So, your answer would be .239. _____.

6. Please indicate how low the player's batting average would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season (In other words, all other things being equal, what is the lowest average you would let him start with) _____.

7. Please indicate how high the player's number of strikeouts would have to have been before you would move him below the fourth spot in the batting order for the start of the "second half" of the season . If he already is below the fourth spot, How high would his strikeouts have to have been before you would move him down lower in the batting order (Example, If he struck out 30 times, you would leave him where he is, but if he struck out 50 times, you would bump him down. So your answer would be 50.)_____.

8. Please indicate how high the player's number of strikeouts would have to have been before you would remove him from the starting lineup for the start of the "second half" of the season (Example, If he struck out 40 times, you would let him start the "second half" of the season, but if he struck out 45 times, you wouldn't. So, you would answer would be 45)_____.

10. Please indicate how high the number of times the player hit into double plays would have to have been before you would move him below the fourth spot in the batting order for the start of the "second half" of the season . If he already is below the fourth spot, How high would the number of times he hit into double plays have to have been before you would move him down even lower in the batting order (Example, If he hit into 6 double plays, you would leave him where he is, but if he hit into 15, you would bump him down. So, your answer would be 15.)_____

11. Please indicate how high the number of times the player hit into double plays would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season. _____

17. On the scale below, please rate the player with respect to the number of times he was allowed to swing at a pitch with a three ball count relative to the rest of the team.

Example: He was allowed to swing at more three-ball pitches than anyone else.

1.....2.....3.....4.....5.....6.....7
Less than anyone else Average More than anyone else

21. On the scale below, please estimate how low the player's overall offensive performance would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If his overall offense was "Excellent" then you would leave him alone, but if his offense was only "Fair", he would be removed from the starting lineup for the start of the "second half" of the season. So you would put a mark somewhere near the 4.

1.....2.....3.....4.....5.....6.....7
Very Poor Performance Fair Performance Excellent Performance

27. Please estimate how low the player's speed would have to have been before you would move him below the fourth spot in the batting order for the start of the "second half" of the season . If he already is below the fourth spot, How high would the number of times he hit into double plays have to have been before you would move him down even lower in the batting order?

Example: If he were a little less than "Very Fast" (about a 6), you would leave him where he is, but if he were a little less than "Fairly Fast", you would move him down. So, you would put a mark somewhere near 3.

1.....2.....3.....4.....5.....6.....7
Not Very Fast Fairly Fast Very Fast

28. Please estimate how low the player's speed would have to have been before before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If he were "Fairly Fast", you would leave him in the starting lineup, but if he were "Not Very Fast", he would be removed from the starting lineup for the start of the "second half" of the season. So, you would put a mark somewhere near 1.

1.....2.....3.....4.....5.....6.....7
Not Very Fast Fairly Fast Very Fast

Reference items for defensive dependent variables

14. On the scale below, please rate the player referred to in question 1 with respect to his overall defensive performance. Mark your rating anywhere along the line.

1.....2.....3.....4.....5.....6.....7
Very Poor Performance Fair Performance Excellent Performance

26. Please rate the player with respect to his speed.

1.....2.....3.....4.....5.....6.....7
Not Very Fast Fairly Fast Very Fast

33. Please rate the player with respect to his ability to get to balls hit in his direction.

1.....2.....3.....4.....5.....6.....7
Only Balls Hit At Him — Gets To Some — Gets To Almost All

37. Please rate the player on the extent to which he has a good arm.

1.....2.....3.....4.....5.....6.....7
Not Very Strong — Fairly Strong — Very Strong

<u>Dependent measures for defense</u>

4. Please estimate how high the player's number of errors would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season (An example is in the instructions)._____

9. Please indicate how low the player's number of assists would have to have been before you would remove him from the starting lineup for the start of the "second half" of the season (Example, If he made 40 assists, you would let him start the "second half" of the season, but if he only made 20, you wouldn't. So, your answer would be 20)_____

12. Please estimate how low the player's number of putouts would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season. _____

15. On the scale below, please estimate how low the player's defensive performance would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If his defensive performance were "Fair", then you would let him start, but if he had "Very Poor Performance", then he would be removed from the starting lineup for the start of the "second half" of the season. So, you would put your mark somewhere near the 1.

1.....2.....3.....4.....5.....6.....7
Very Poor Performance — Fair Performance — Excellent Performance

28. Please estimate how low the player's speed would have to have been before before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If he were "Fairly Fast", you would leave him in the starting lineup, but if he were "Not Very Fast", he would be removed from the starting lineup for the start of the "second half" of the season. So, you would put a mark somewhere near 1.

```
1......2.....3.....4.....5.....6.....7
Not Very        Fairly           Very
Fast            Fast             Fast
```

34. Please estimate how low the player's ability to get to balls would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If he got to some balls, then you would let him start, but if he only got to balls hit at him, then you wouldn't let him start. So, you would put a mark somewhere near 1.

```
1......2.....3.....4.....5.....6.....7
Only Balls      Gets To          Gets To
Hit At Him      Some           Almost All
```

38. Please estimate how bad his arm would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If his arm were "Fairly Strong", you would let him start, but if his arm were "Not Very Strong", then you wouldn't let him start. So, you would put a mark somewhere near 1.

```
1......2.....3.....4.....5.....6.....7
Not Very        Fairly           Very
Strong          Strong         Strong
```

<u>Reference items for quality of practice</u>

18. Please rate the player on the extent to which he took his batting practice seriously (as seriously as he takes it in his games.)

```
1......2.....3.....4.....5.....6.....7
Not very        Fairly        As serious
serious         serious       as games
```

24. Please rate the player on the extent to which he tried to keep in shape.

1.....2.....3.....4.....5.....6.....7
Doesn't Try Very Hard Tries Fairly Hard Tries Very Hard

29. Please rate the player on the extent to which he came to practice late or left early.

1.....2.....3.....4.....5.....6.....7
Almost never Sometimes Almost always

31. On the scale below, please rate the player referred to in question 1 on the extent to which he took practice in general seriously. (as seriously as games)

1.....2.....3.....4.....5.....6.....7
Not very serious Fairly serious As serious as games

<u>Dependent measures for quality of practice</u>

19. Please estimate how low the player's seriousness in batting practice would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If he had been "Fairly Serious", you would leave him alone, but if he had been "Not Very Serious", he would be removed from the starting lineup for the start of the "second half" of the season. So, you would put your mark somewhere near 1.

1.....2.....3.....4.....5.....6.....7
Not very serious Fairly serious As serious as games

25. Please estimate how low the player's efforts to keep in shape would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If he tried a little harder than "Fairly Hard" to keep in shape (about a 5), you would leave him alone, but if he didn't try very hard, he would be removed from the starting lineup for the start of the "second half" of the season. So, you would put a mark somewhere near 1.

1.....2.....3.....4.....5.....6.....7
Doesn't Try Very Hard Tries Fairly Hard Tries Very Hard

30. Please estimate how often the player would have to have come to practice late or leave early before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If he left early or came late "Sometimes", then you would leave him alone, but if he "Almost Always" came late or left early, then you would remove him. So, you put a mark somewhere near 7.

1.....2.....3.....4.....5.....6.....7
Almost never Sometimes Almost always

32. On the scale below, please indicate how low the player's seriousness in practice in general would have to have been before he would be removed from the starting lineup for the start of the "second half" of the season.

Example: If he was "As Serious as Games", you would let him start, but if he was only "Fairly Serious", you wouldn't let him start. So, you put a mark somewhere near 4.

1.....2.....3.....4.....5.....6.....7
Not very serious Fairly serious As serious as games

APPENDIX C

Explanation of Study and Instructions

(Read Carefully!)

The purpose of this study is to discover how important home runs are to you. More specifically, to what extent will a player's ability to hit home runs make up for deficiencies in other areas? I am not claiming that home run hitters are necessarily bad defensive players or slackers in practice. I'm just saying that, all other things being equal, a player that hits home runs can be a starter even if, for example, he isn't a great defensive player.

All of the following questions except for questions 2 and 3 refer to the player on your team who hit the most homers during the season that just ended. If your season is not yet over, then use the person who has the most homers up to this point. If there is a tie for the most homers, then take your pick.

Some of the 41 questions are simply performance questions while others are hypothetical questions like, How high would the player's number of errors have to have been before he would be removed from the lineup? These questions should be answered as if the baseball season that just ended were only the first half of the season and you were making lineup decisions for the second half. They should also be answered as if there were no DH rule (You can't make a bad defensive player DH, you either bench him or not). For example, if your best home run hitter was the left fielder and you answered the question, "Please rate the player on the extent he took batting practice seriously" with a rating of 6, and you would pull him from the lineup now if he had been a 2 with respect to his seriousness in batting practice, then you would mark 2 on the question that asks you how low the player's seriousness in batting practice would have to have been before you would remove him from the starting lineup for the "second half" of the season.

If your best home run hitter was the Designated Hitter most of the time, then please indicate this in question #1 and leave questions 4, 9, 12, 14, 15, 33, 34, 37, and 38 blank.

If any of this is unclear, there are examples for many of the questions, but these are only to help you. I do not want to suggest what your answer should be. I only want to know what you think.

Finally, it may be that some of the questions don't really apply to you. For example, you may not be terribly concerned with how seriously a player takes batting practice. If this were the case, then you would answer the question "Please estimate how low the player's seriousness in batting practice would have to go before you would sit him out for at least one game" with the lowest possible rating.